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I am sorry  
to hear of  
your death  
and hope  
you are  
resting  
now.





*Macqueen*

THE CLARENDON READERS  
IN  
LITERATURE  
& SCIENCE.

EDITED BY  
J. C. SMITH

—●—  
BOOK III  
—●—

FOR USE IN SCHOOLS

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## PREFACE

GOOD judges have more than once complained to me of the small progress that pupils seem to make in English between twelve and fifteen. Some of them roundly assert that such progress as is made in these years is merely quantitative; that at the end of them the pupils write more but write no better, have read more but gone no deeper. These critics exaggerate; but they exaggerate a truth.

How far this state of things is due to the general decay of Biblical and Classical studies I cannot here inquire. This series seeks to deal with another and a remediable cause—the premature abandonment of the Class Reader. In the Preparatory School the Reader supplies a solid core to the instruction in English: thereafter it is now the fashion to put it aside and trust wholly to continuous reading. That plan no doubt makes reading more pleasurable, and gives many pupils a liking for it. And this is much. But the increase in pleasure is not accompanied by a corresponding increase in power. The pupils are apt to be satisfied with vague general impressions; they do not learn to grapple with English at close quarters and wring the full meaning out of it. English is not an easy language. Of course, there is plenty of easy reading in English for those who are content to saunter on its lower slopes. But to reach its peaks we must climb.

Moreover, ‘continuous reading’ generally means imaginative literature, *i.e.* verse or prose fiction: if other

forms are admitted they are admitted primarily on grounds of style. Now there are many boys, and some girls, who do not greatly care for imaginative literature, and yet are not only clever about *things* but will read eagerly about their hobbies and even master a formidable technical vocabulary in pursuit of them. It is a stingy and pedantic provision of literature that will not cater for the appetite for facts. It would be equally pedantic, of course, to exclude imaginative literature altogether from a series like this, and I have not done so ; but I have chosen to represent it mainly by those world-famous stories which have entered, as it were, into the very tissues of European Literature—stories like the Tale of Troy and the Arthurian Legends. Modern fiction will take care of itself ; and for lyric poetry there are many good anthologies.

Finally, even in the earlier teens, new vistas begin to open out : boys and girls begin to reflect, to be interested in questions of conduct and the inner life, to ask ‘ what it is all about.’ I have not hesitated to include some extracts that bear on these things.

Such is the purpose of this series, and such have been the principles of selection. The arrangement of matter in the several books explains itself. I have added brief notes where notes seemed indispensable ; and I have glossed foreign or archaic words ; but for current English words the dictionary should be used. One of the chief things that pupils have to learn at this age is how to use a dictionary.

I desire to thank the many friends who have helped me, and in particular, Mr. J. R. Cameron, Mr. J. T. Ewen, Mr. C. E. L. Hammond, and Mr. C. F. A. Pantin.

J. C. SMITH.

# CONTENTS

## I

	PAGE
THE SONG OF ROLAND :	
Historical - - - - Editor - - - -	1
The Song of Roland - - Adapted - - - -	3
The Song of Roland in English Translated by C. Scott Moncrieff	11
THE ARTHURIAN LEGENDS :	
Historical - - - - Editor - - - -	13
The Coming of Arthur - - Sir Thomas Malory (abridged) -	15
Gawain and the Green Knight Adapted from the M.E. Romance	20
The Death of Arthur - - Sir Thomas Malory (abridged) -	28
The Passing of Arthur - - Lord Tennyson -	36

## II

THE CORONATION OF CHARLEMAGNE	Thomas Hodgkin	-	37
TIMOUR THE TARTAR - - -	R. W. Church	-	42
THE FALL OF CONSTANTINOPLE -	W. F. Collier	-	50
TWO HEROES - - - -	J. T. Motley	-	54
SPAIN IN THE SEVENTEENTH CEN- TURY - - - -	Lord Macaulay	-	56
LE ROI SOLEIL - - - -	W. M. Thackeray	-	59
MARIE ANTOINETTE - - - -	Edmund Burke	-	66
THE DEATH OF MARIE ANTOINETTE	Thomas Carlyle	-	67



*On the Extinction of the Venetian*

<i>Republic</i> - - - -	<i>William Wordsworth</i>	69
GARIBALDI - - - -	<i>G. M. Trevelyan</i> -	70 <i>cf</i>
THE ENGLISH IN INDIA - -	<i>Lord Curzon</i> - -	71 <i>Two Horrors</i>
THE GETTYSBURG ORATION -	<i>Abraham Lincoln</i> -	72
THE TERLINCHTHUN ORATION -	<i>H.M. King George V.</i>	73

## III

A VISIONARY REPUBLIC - -	<i>William Wordsworth</i>	77
THE VILLAGE AFTER ENCLOSURE -	<i>J. L. and</i>	
	<i>B. Hammond</i> -	79 <i>+</i>
<i>The Deserted Village</i> - -	<i>Oliver Goldsmith</i> -	82
THE INDUSTRIAL REVOLUTION -	<i>W. E. H. Lecky</i> -	84
THE MOULD-RUNNER - -	<i>Arnold Bennett</i> -	88
THE BLACK COUNTRY IN 1824 -	<i>Thomas Carlyle</i> -	90
<i>Penumbra</i> - - - -	<i>Laurence Binyon</i> -	91
THE MIDLAND COUNTRY IN 1835 -	<i>George Eliot</i> - -	93

## IV

ABOUT DR. JOHNSON - - -	<i>James Boswell</i> -	99
POOR RICHARD - - - -	<i>Benjamin Franklin</i> -	104
PRESENCE OF MIND - - -	<i>John Brown</i> - -	107
THE SOLDIER'S TRADE - - -	<i>John Ruskin</i> - -	114
<i>The Discharged Soldier</i> - -	<i>William Wordsworth</i>	115
THE HERITAGE OF CHIVALRY -	<i>Sir Edward Strachey</i>	118
<i>A Very Perfect Knight</i> - -	<i>Geoffrey Chaucer</i> -	124
NOBLE MANNERS - - - -	<i>Coventry Patmore</i> -	126
THE LANTERN-BEARERS - - -	<i>R. L. Stevenson</i> -	128
WHAT IT ALL COMES TO - - -	<i>C. E. Montague</i> -	130

## V

PICTURESQUE EDINBURGH - -	<i>R. L. Stevenson</i> -	133
<i>Written in Edinburgh</i> - - -	<i>A. H. Hallam</i> -	141

# CONTENTS

vii

	PAGE
LONDON FROM HIGHGATE HILL - Thomas Carlyle -	142
On Crossing Westminster Bridge - William Wordsworth	143
London from Shooter's Hill - Lord Byron -	144
THE STONES OF VENICE - John Ruskin -	144
Venice from the Euganean Hills - P. B. Shelley -	145
ROME - P. B. Shelley -	146
ATHENS - Cardinal Newman -	153
Athens, the Eye of Greece - John Milton -	156
CONSTANTINOPLE - Edmund Gibbon -	157
THE ALHAMBRA - H. W. Longfellow -	161

## VI

BREAK-UP OF THE ICE ON THE YENESEI - Henry Seebohm -	164
CANOEING ON CANADIAN RIVERS - Sir W. F. Butler -	172
HECLA AND SKAPTA JOKUL - Lord Dufferin -	177
VESUVIUS - P. B. Shelley -	181
'Italy, my Italy' - Robert Browning -	188
BURKE'S VISION OF INDIA - Lord Macaulay -	190
Arabia - Walter de la Mare -	192
THE MONARCH OF THE DESERT - A. W. Kinglake -	193
DAY IN THE DESERT - C. M. Doughty -	195
Sailing on the Map - Robert Herrick -	196
MAP-READING - C. E. Montague -	197

## VII

THE SPIDER - Oliver Goldsmith -	201
DEVOTION OF WORKER BEES - Maurice Maeterlinck	206
A Drunken Bee - H. A. Beers -	208
SINGING CONTESTS - W. H. Hudson -	209
BUTTERFLIES AND ANTS - H. Eltringham -	213
FORAGING ANTS - H. W. Bates -	216

	PAGE
<i>The Wandering Wood</i> - - - <i>Edmund Spenser</i> -	227
<i>A Grove</i> - - - - <i>William Browne</i> -	228
<i>Yardley Oak</i> - - - - <i>William Cowper</i> -	229
<i>YEW TREES</i> - - - - <i>W. H. Hudson</i> -	231
<i>Garden Flowers</i> - - - - <i>Edmund Spenser</i> -	233
<i>OF GARDENS</i> - - - - <i>Lord Verulam</i> -	233
<i>The Garden</i> - - - - <i>Andrew Marvell</i> -	236
<i>THOREAU</i> - - - - <i>R. W. Emerson</i> -	237
<i>A NATURALIST'S DAY IN THE TROPICS</i> - - - - <i>H. W. Bates</i> -	251
<i>THE RHYTHM OF LIFE</i> - - - <i>Sir Arthur Shipley</i> -	254

## VIII

<i>THE SUMMERS OF 1781 AND 1783</i> - <i>Gilbert White</i> -	257
<i>WEATHER SIGNS</i> - - - <i>Thomas Hardy</i> -	260
<i>THE RULER OF THE WEST</i> - - <i>Joseph Conrad</i> -	263
<i>Ode to the West Wind</i> - - - <i>P. B. Shelley</i> -	271
<i>THE DARK COMPANION OF ALGOL</i> - <i>Percival Lowell</i> -	275
<i>Triumphs of Astronomy</i> - - <i>Robert Bridges</i> -	278
<i>THE VELOCITY OF LIGHT</i> - - <i>C. R. Gibson</i> -	280
<i>INVISIBLE RAYS</i> - - - <i>John Tyndall</i> -	285
<i>RADIO-ACTIVITY</i> - - - <i>Frederick Soddy</i> -	290
<i>AN A.B.C. OF ATOMS</i> - - - <i>Hon. Bertrand Russell</i> -	294
<i>SMASHING UP ATOMS</i> - - - <i>E. E. Slosson</i> -	300
<i>THE METHOD OF DISCOVERY</i> - <i>T. H. Huxley</i> -	305

# LIST OF ILLUSTRATIONS

	PAGE
Fontarabbia. Photograph by Levy et Neurdein réunis -	5
A Battle with the Saracens. The Capture of Syracuse by the Moors in the Ninth Century. Photograph G. Millet, Collection des Hautes Études, Sorbonne, Paris	9
The Lady of the Castle tempts Sir Gawain - - -	25
Mort D'Arthur. From the Picture, by James Arthur, in the Tate Gallery. Photograph by Mansell - -	35
St. Peter giving Spiritual Power (represented by a Stole) to the Pope, and Temporal Power (a Banner) to Charlemagne. Photograph by Alinari - - -	41
Tartars on the Move - - - - -	43
Mahomet II. From a woodcut of 1603 - - - -	50
The Capitulation of Breda. From a picture by Velasquez in the Museo de Madrid - - - - -	57
The Bassin d'Apollon and Grand Canal. From a contemporary print - - - - -	61
An Historical Study. From a sketch by W. M. Thackeray	63
Their Majesties inspecting the Montecchio Precalcino Cemetery in Italy. Photograph by Central News -	75
The Revolution in Spinning. The upper picture is from a painting by George Walker; the lower from <i>Economic Botany: Cotton Manufacture</i> - - - -	87
Dr. Johnson. From the painting, by Sir Joshua Reynolds, in the National Portrait Gallery - - - -	101
A Mediaeval Tournament. From a carved ivory panel of the thirteenth century. Photograph by Alinari -	119
A Sixteenth-century Equestrian Statue of a Knight. From a tomb in Verona. Photograph by Alinari -	125
Edinburgh from the Castle - - - - -	135
Holyrood Palace - - - - -	137

	PAGE
The Forum as seen through the Arch of Septimius Severus. Photograph by Mr. Percival Hart - - - -	147
The Coliseum. Photograph by Anderson - - - -	149
The Arch of Constantine - - / - - - - -	151
The Tomb of Cestius. Photograph by Mr. Percival Hart	152
The Olive Harvest. From a Greek vase. By the courtesy of the Trustees of the British Museum - - - -	155
The Acropolis or Citadel. Photograph by English Photo- graphic Company, Athens - - - - -	155
Constantinople, showing the Golden Horn and, in the fore- ground, the Mosque of Sancta Sophia. Photograph by Sir Aurel Stein - - - - -	159
The Alhambra. Photograph by Mr. Percival Hart - -	163
The Tundra - - - - -	167
Red Indian Falls, Newfoundland. Photograph by Anglo- Newfoundland Development Co. - - - - -	175
Vesuvius and the Bay of Naples. Photograph by Mr. W. A. Casson - - - - -	185
The North Gate of the Great Stupa at Sanchi, built about 150 B.C. Photograph by Archaeological Survey of India - - - - -	191
A Singing Contest - - - - -	211
' Fig. 50 ' - - - - -	214
The Wolf Lighthouse, Scilly Isles. Photograph by Gibson & Sons, Penzance - - - - -	265
' Some fierce Maenad.' Palazzo dei Conservatori - -	273
An Observatory in 1587 with astronomical instruments. From <i>Cosmographia Blaviana</i> , 1662 - - - - -	279
William Herschel - - - - -	289



# I

## THE SONG OF ROLAND

### (1) *Historical*

WHEN William of Normandy, landing at Hastings, marched up against Senlac Hill, where the Saxons awaited him behind their shield-wall, we are told that the jongleur Taillefer rode ahead of the Norman ranks, tossing his sword in the air and singing the Song of Roland. There is no incident in English history more picturesque, or more significant. And the song that Taillefer sang was no less symbolic than the sword that he tossed and caught again. For with the Normans there came to England not only a new military caste and dynasty of kings, but a new civilization and a new literature, the civilization and the literature of France.

What then was this Song that Taillefer sang? It was some part of an old French poem, which tells how at Roncesvalles in the Pyrenees the rear-guard of Charlemagne's army, commanded by his nephew Roland, was overwhelmed by an immense host of Saracens, and how Charlemagne, turning upon them, avenged his nephew's death, routed the Saracens utterly, and conquered the whole of Spain. The story is a legend, but like many legends it grew around a grain of truth. To understand this we must go far back in history.

Every one knows that when the Roman Empire

began to crumble, and the Roman legions were withdrawn from Britain, this island of ours was invaded by hosts of Angles and Saxons from beyond the North Sea. The same thing happened on the continent. Hordes of Germans poured over the Rhine into the fair province that the Romans called Gaul. Foremost among these invaders were the Franks, who give the country its modern name of France. But scarcely had they made themselves masters of the land and settled down in it when from another quarter of the world a new race of conquerors arose. Early in the seventh century of our era a great prophet called Mahomet appeared in Arabia, preaching the new gospel of Islam, and firing the minds of his countrymen with a passion to go forth and conquer all the world in the name of Allah and his Prophet. The flame ran along the north of Africa as far as to Morocco, whence it leapt over the Straits of Gibraltar into Spain. From Spain the Saracens, as they were called, pressed northward into France; and they might have overrun the whole of France and utterly overwhelmed all Western Christendom, but in 732 A.D. the Franks under Charles Martel—that is, Charles the Hammer—met and defeated them at Tours in a battle which has long been recognized as one of the decisive battles of the world. A grandson of Charles Martel, known to history as Charlemagne—that is, Charles the Great—carried the Frankish arms far into the heart of Germany, and established a great kingdom in Western Europe. In 800 A.D. he was crowned at Rome as Holy Roman Emperor. After his death Charlemagne became the national hero of France, the traditional champion of Christendom against the Moslem. Many legends gathered round his name, and exploits were attributed

to him that belonged in truth to his grandfather the Hammer. The particular legend which gave us the Song of Roland rests, as I said, upon fact. In 778 A.D. Charlemagne did invade Spain, but was forced to withdraw by a revolt at home. In the retreat his rear-guard was ambushed in the Pyrenees by the Basques, and cut off to a man. Among the slain was Hruodland, prefect of the Breton March. This is the hero whom we know as Roland. And now for the story, as the old French poet tells it.

### (2) *The Song of Roland*

After seven years of war, Charlemagne had conquered almost the whole of Spain. Only in Saragossa King Marsilies still held out. At length, despairing of succour, Marsilies sent an embassy to Charlemagne, offering to become a Christian and his vassal; but in his heart he hoped that Charlemagne would then return to France, and leave Spain in peace. The ambassadors found Charlemagne seated on a fald-stool before his tent, with the Twelve Peers of France around him. Very old was the Emperor: two hundred years old, men said: 'white was his beard and blossoming white his crown'; but his eye was not dimmed nor his force abated. He heard the ambassadors in silence, lowering on the ground, fingers in beard. Then, looking up, 'Lords Barons,' he said, 'whom shall we send to King Marsilies?' 'I will go,' said the good Duke Niemes; 'And I,' said Roland, the Emperor's own nephew; 'And I,' said Roland's sworn brother Oliver; 'And I,' said the bold Archbishop Turpin. But, 'Sit you down,' said Charlemagne, 'till I command'; and, turning to the peers, he said, 'Chevaliers, choose me out a baron

to do my errand to Marsilies.' 'Let Genelon go,' said Roland, and all the peers assented. Now Genelon was Roland's stepfather, but there was little love between them. He shook with rage at Roland's speech, so that he dropped the glove which Charlemagne held out to him; for he knew that the man who went to Marsilies put his hand in the wolf's mouth. Nevertheless he picked up the glove, and went, swearing to be revenged on Roland. Arrived at Saragossa, he delivered the Emperor's command, which was that Marsilies should follow him presently to Toulouse, and there do homage and be christened. And Genelon counselled Marsilies to feign submission. 'For then,' said he, 'Charlemagne will return forthwith to France, leaving Roland with a rear-guard in the pass. Do you then fall upon him with a hundred thousand men; for if once that proud hothead were dead, the Franks would trouble Spain no more.' Marsilies therefore feigned submission; whereupon Charlemagne set his host in motion, and himself marched off with his main array through the mountains; but Roland, by Genelon's prompting, he left with twenty thousand men and the Twelve Peers of France, to guard the pass of Roncesvalles. Roland disposed half his force in the pass; the other half, under Walter del Hum, he sent to man the heights. And the day wore on.

Charlemagne was far away in the heart of the mountains when it seemed to Oliver that he heard from the south the blare of distant trumpets. 'I fear the Saracens are upon us,' he said. 'Let them come,' said Roland. 'God will give us the glory. Pagans are wrong, Christians are right.' Then Oliver climbed a peak, and gazing southward saw a vanguard advancing.



FONTARABBIA

The Pyrenees can be seen in the background



'They are coming,' he called; 'Genelon has betrayed us!' 'Peace, comrade,' said Roland; 'the man is my stepfather.' Oliver climbed yet higher, and beheld the main force approaching, rank behind rank innumerable, with gleaming helms and shields. 'They are here,' he cried, as he ran down to the pass. 'Sound your oliphant, comrade, that Charles may turn back to our rescue.' 'Never shall it be said,' quoth proud Roland, 'that for paynims I took my horn in hand.' 'Nay, wind it, wind it,' said Oliver earnestly. 'They are many, we are few.' 'The more foes, the more fame,' answered Roland in his pride. At this the Archbishop pricked his horse and rode to the summit of a knoll; and sitting his horse there he exhorted the Franks to fight for Christendom; then he gave them absolution, and blessed them with his holy hands. And even as he ended his benediction the Saracens were upon them.

Marsilies's nephew Aëlroth rode foremost of the paynim host. He marked Roland for his prize, and, cantering up to the Frankish array, he called tauntingly, 'Felon Franks, do you bide our onset? Your dotard Emperor has betrayed you.' For answer Roland charged on him so vehemently that the spear-head went clean through his body. He shook the carrion from his shaft. 'Now call my Emperor traitor!' he cried. 'Strike, Franks, for sweet France! Monjoie!' he shouted, and spurring his good steed Villantif he charged into the midst of the foe. Fifteen Saracens he unhorsed before his spear flew in flinders. Then he drew his far-famed sword Durendal, that had precious relics in its hilt; and Oliver by his side drew his brown blade Halticlere. As corn falls before the scythe so fell oliphant] hunting-horn, properly of ivory from the elephant's tusk.

the Saracens beneath their strokes. Helms were hewn, shields slashed and hauberks riven, till on every side the bright blood ran down like rain. All the paladins did valiantly—Gerins and Gerers and the Duke Sansun, Ansers and Otès and Berenger and Engellers of Bordeaux—each slew his man. But none fought better that day than the bold Archbishop : I swear he was the prowtest priest that ever wore tonsure.

Four times the paynims charged, and four times they were repulsed with huge slaughter. But the Christians too were falling fast. When Roland looked round him after the fourth charge there were but fifty Franks upon their feet. He turned to Oliver and said, ‘ Now will I sound my oliphant.’ ‘ For shame ! ’ cried Oliver. ‘ You would not deign to sound it when I bade you, and now it is too late.’ ‘ Upbraid him not, brother,’ said the good Archbishop. ‘ It is true that Charles cannot save us now ; yet may he come in time to give us Christian burial, and not leave us here to the wolves and the kites. So let him sound his oliphant.’ Roland set the horn to his lips, and blew. Far away in the mountains Charlemagne heard the note. ‘ Surely our barons are fighting,’ he said. ‘ On any other lips that were a lie,’ said Genelon. Again Roland set the horn to his lips : the clear blood gushed from his mouth as he blew. ‘ Of a surety that is Roland’s battle-horn,’ said the Emperor. ‘ You are a babe for all your white beard,’ returned Genelon. ‘ That is no war-horn. The young braggart is hunting a hare, and vaunting and blowing as he leads the chase. Forward, my liege ; France yet is far away.’ Once more Roland set the horn to his lips, and blew with bursting temples. ‘ It is Roland’s horn,’ cried the good Duke Niemes. ‘ He blows in pain—he

is sore bestead—he is betrayed ! To the rescue, sire ! ’  
‘ Seize that felon ! ’ cried Charlemagne ; and as the  
scullions loaded Genelon with fetters he wheeled about  
and galloped back to the rescue, his white beard  
streaming in the wind.

And now King Marsilies led up the fifth assault.  
Roland sliced off his right hand, and he fled howling.  
But what availed his flight when from the rear the  
alcaliph came on with fifty thousand blackamoors, and  
pierced Oliver through the back ? Oliver writhed  
round in his saddle, and clove the miscreant to the  
teeth ; but he knew he had taken his own death-wound.  
‘ Roland ! ’ he cried, and hacked his way through the  
press to find his comrade. But when he came where  
Roland was, his eyes were so dim with loss of blood and  
pain that he knew him not ; he heaved up his sword  
and struck Roland feebly on the helm. ‘ Did you mean  
that stroke, brother ? ’ said Roland gently, ‘ See it is  
Roland, that loved you ever. ’ ‘ I hear your voice, ’ said  
Oliver, ‘ but I cannot see you. And I have struck you—  
oh, forgive the blow ! ’ ‘ I am not hurt, ’ Roland  
answered. ‘ As God sees me, I forgive you ’ ; and they  
leaned towards each other lovingly. Then Oliver  
slipped from his horse, and, kneeling on the ground with  
hands uplifted, he commended his soul to God, and so  
died. And now no Frank was left alive save only  
Roland, and Turpin, and Walter del Hum.

Even as Oliver expired, the sound of Charlemagne’s  
trumpet was heard in the distance, and the Moslems  
rallied for one last onslaught. A storm of arrows and  
javelins burst on the three Franks : Walter was slain  
and Turpin wounded to the death ; but Roland, though  
his horse was killed under him, still stood erect when



Charlemagne's trumpet sounded nearer, and the Moslems broke and fled. Then went Roland through the battle-field, and, lifting the bodies of the peers of France, he bore them in his arms to where Turpin lay, that he might bless them with his holy hands. But when he stooped over Oliver's body, for grief and pain he fainted away. There ran a little stream through Roncesvalles : Turpin took the oliphant, and crawled towards it, that he might fetch water to revive Roland. But before he could gain the brink of the rivulet, his heart burst, and he sank down in death. When Roland awoke from his swoon, he stood alone upon that stricken field. Four marble terraces rose above it, on the topmost of which two fair pine-trees grew. Roland took his sword and his oliphant, and climbed to where he could gaze out over the land of Spain ; then he swooned once more on the green grass. A Saracen who lay among the corpses feigning death got to his feet when he saw Roland fall, and ran towards him, hoping to make prize of Durendal. But when Roland felt a strange hand on his sword, he started up from his swoon, and brained the infidel with his horn. Then he took Durendal and smote it hard upon the marble stone, for he would not have it fall unbroken into pagan hands. The good sword cried out, and leapt back from the blow ; but he could not break it, for the precious relics in its hilt. So he sat down under a fair pine-tree, with his horn and his sword by his side, and he gazed out over the land of Spain, remembering many things. He thought of the kingdoms he had conquered and the battles he had won. He thought of sweet France, and his brave kinsmen, and Charlemagne his uncle and liege-lord. And, last, he thought of his own soul. He confessed his sins, and



prayed for forgiveness ; then, stretching out his right hand glove to God, he yielded up the ghost. And the archangels Michael and Gabriel bore his soul to Paradise.

The rest of the Song tells how Charlemagne, returning, drove the Saracens into the Ebro and defeated another great army of Moslems brought against him by the Emir of Babylon. Then he went home to Aix, where Genelon was tried by ordeal of battle, and, his champion being vanquished, was torn in pieces by wild horses.

### (3) *The Song of Roland in English*

In Old French the Song of Roland consists of 4001 ten-syllabled verses, made up into 291 *liasses* or bundles of varying length, each tied together by a single assonance which runs right through it. (An assonance is an imperfect rhyme, where the final vowels are the same, but not the final consonants.) Many of the bundles end with the letters *aoi*, which mean—no one knows what ; perhaps simply ‘Ahoy !’ Here is a rendering of the first ‘bundle,’ which will serve to show the effect :

‘ Our lord and king, the Emperor Charlemagne,  
Full seven years now has he been in Spain,  
And conquered all the high land to the main.  
No castle in that realm but he has ta’en,  
Nor tower nor town is left for him to gain,  
Save Saragossa on its high mountain :  
King Marsilies it holds, who God doth hate :  
Mahound he serves, Apollyon calls to aid,  
Yet cannot ward the ills that work him pain.’

The whole poem has been translated in the original measure by Captain Scott Moncrieff ; here is his rendering of its most famous episode :

*The Blowing of the Horn*

The Count Rollanz, with sorrow and with pangs,  
 And with great pain sounded his olifant :  
 Out of his mouth the clear blood leaped and ran,  
 About his brain the very temples cracked.  
 Loud is its voice, that horn he holds in hand ;  
 Charlès hath heard, where in the pass he stands,  
 And Niemès hears, and listen all the Franks.  
 Then says the King : ‘ I hear his horn, Rollant’s ;  
 He’ld never sound, but he were in combat.’  
 Answers him Guenes : ‘ It is no battle, that.  
 Now are you old, blossoming white and blanced,  
 Yet by such words you still appear infant.  
 You know full well the great pride of Rollant ;  
 Marvel it is, God stays so tolerant.  
 Noples he took, not waiting your command ;  
 Thence issued forth the Sarrazins, a band  
 With vassalage had fought against Rollant ;  
 He slew them first, with Durendal his brand,  
 Then washed their blood with water from the land ;  
 So what he’d done might not be seen of man.  
 He for a hare goes all day, horn in hand ;  
 Before his peers in foolish jest he brags.  
 No race neath heav’n in field him dare attack.  
 So canter on ! Nay, wherefore hold we back ?  
 Terra Major is far away, our land,’ AOI.

*Liasse cxxxiv.*, tr. CHARLES SCOTT MONCRIEFF.

By kind permission of the translator and Messrs. Chapman & Hall.

NOTE.—The Song of Roland is the national epic of France, but its direct influence on English poetry has not been great. Chaucer knew it, of course—he calls a traitor ‘a Genelon,’ as we should call him ‘a Judas’; we still have the proverbial expression ‘a Roland for an Oliver’; and Shakespeare has preserved from some lost ballad the haunting line :

‘ Child Roland to the dark tower came.’

In the sixteenth century the Italian Ariosto made Orlando the hero of two poems which had a considerable influence on Elizabethan poetry ; but Ariosto's Orlando has little of Roland but his name. Milton tells of those warriors

‘whom Biserta sent from Afric shore,  
When Charlemain with all his peerage fell  
By Fontarabbia.’

And the blast of the horn so rang in Scott's ears that he made the hero of *Rob Roy* write :

‘O for the voice of that wild horn,  
On Fontarabian echoes borne,  
The dying hero's call,  
That told imperial Charlemagne,  
How Paynim sons of swarthy Spain  
Had wrought his champion's fall’ ;

forgetting, apparently, that he himself had written in *Marmion* :

‘O for a blast of that dread horn,  
On Fontarabian echoes borne,  
That to King Charles did come,  
When Rowland brave and Oliver,  
And every paladin and peer,  
On Roncesvalles died !’

## THE ARTHURIAN LEGENDS

### (1) *Historical*

MEDIAEVAL romance had three chief themes—three ‘matters,’ as French writers called them—‘of France, of Britain, and of Rome the Great.’ ‘Matter of France’ meant stories like the Song of Roland, about Charlemagne and his paladins. ‘Matter of Rome’ meant classical stories like the Tale of Troy. And ‘Matter of Britain’ meant stories about King Arthur and his Knights of the Round Table.

Arthur, like Charlemagne, was a historical personage. But he belongs to a remoter age than Charlemagne, and his figure looms very dim through the mists of antiquity. Thus much, however, we can make out : In the fifth

century of our era, after the Roman legions had withdrawn from Britain, the British realm, if we may call it so, extended for a time from Brittany in France to Dumbarton on the Clyde. (Brittany means the land of the Britons, and Dumbarton •their 'dun' or fort.) Presently heathens from overseas fell on this Christian realm, broke it in pieces, and conquered most of it. Arthur was not King of the British realm, which indeed had no one king. He was not even a Prince. He was commander-in-chief of the armies of Britain in her struggle for existence. North and south he fought twelve great battles against the heathens, till at last he was betrayed, as it seems, by his wife and some near kinsman.

The Arthurian legends come largely from Wales. Yet Arthur belonged by birth not to Wales but to Northern Britain, where the hill of Arthur's Seat, near Edinburgh, still bears his name. But when the Saxons drove through to the Bristol Channel and the Irish Sea, breaking the British realm in pieces, Wales became the last stronghold of the British race, and it was by Welsh bards that the memory of Arthur was longest cherished, as a symbol of the ancient glories of Britain. Nay, they believed that Arthur was not dead; that somewhere, in the Blessed Isles, after his long warfare, he lay asleep, and would one day return at the head of his knights to restore the British kingdom.

In the twelfth and thirteenth centuries these legends began to flow from Wales, and perhaps from Brittany also, into the stream of Anglo-Norman literature. Chroniclers repeated them; romancers embellished them; and many stories which originally had nothing to do with Arthur, such as the stories of Launcelot and

Tristram, and the mystical legend of the Holy Grail, were drawn into the Arthurian cycle by the simple device of enrolling their heroes among King Arthur's Knights of the Round Table. For the Age of Chivalry was now come: these mediæval romancers conceived of the ancient British warrior as a feudal monarch, and surrounded him with a retinue of paladins, to match the peers of Charlemagne, enrolled in a knightly order, half-military, half-religious, like the Templars and Hospitallers of whom we read in *Ivanhoe*—the famous Order of the Table Round. Scores of romances in verse and prose were written about his exploits and theirs, most of them in French, but some also in English and in Scots; and near the end of the fifteenth century, when the Age of Romance and Chivalry was passing away, the matter of these books, or of the best of them, was brought together by Sir Thomas Malory in a famous prose romance called *Morte Darthur*. It is one of the most delightful books in the world, and has inspired more English poetry than any other book except the Bible.

## (2) *The Coming of Arthur*

Strange tales are told of Arthur's birth. Some indeed say that he was the true son of Uther Pendragon, King of Britain, born on the night on which his father died, and concealed by Merlin till he came of age, for fear of the rebel barons. But the best of our authors say otherwise. For they aver that while King Uther lay dying in his castle of Tintagel—'dark Tintagel by the Cornish main'—while he lay dying there with no son to succeed him, the wizard Merlin and his master Blays walked on the seashore below the castle, musing sadly

on the civil wars which tore the realm, and on the greater evils that must befall when it should be left without a king. As they communed thus, they lifted up their eyes and beheld a strange light upon the sea, many-coloured as a rainbow, but brighter by far. Against the light a great wave rose, and on its crest rode a naked child, who lighted at Merlin's feet in a cascade of jewelled foam. Merlin lifted up the child and said, 'God has sent us a king!' In the night King Uther died; and in the morning, fearing the rebel barons, Merlin conveyed the child away privily out of the castle by a postern gate, and, having caused him to be christened by the name of Arthur, delivered him to a good knight, Sir Ector, one that had been true to King Uther, to be brought up in secret until the time should be ripe. So Sir Ector and his lady reared the boy Arthur as their own, along with their son Kay.

After King Uther's death, Sir Thomas Malory tells us, the realm stood in jeopardy long while. For all the great barons made themselves strong, and many weened to have been king. At length the Archbishop of Canterbury, by Merlin's counsel, summoned all lords and gentlemen-at-arms to meet him in London on Christmas Day, hoping that Jesus, who came on that day to be King of mankind, might show some miracle to declare who should be rightwise king of this realm. And many obeyed the Archbishop's summons. On Christmas Day, then, long ere dawn, all the estates were gathered to pray in the greatest church of London. And when matins and the first mass were done, there was seen in the churchyard a great stone, four-square, like unto a marble stone; and in the midst of it was like an anvil of steel a foot in height; and therein stuck a fair sword



naked by the point, on which were letters of gold that said, 'Whoso pulleth out this sword is rightwise king born of all England.'

When this was told to the Archbishop, he commanded them all to keep within the church till the high mass were done. And when all the masses were done, the lords went to behold the stone and the sword; and when they saw the inscription some essayed to pull out the sword, but none might move it. 'He is not here,' said the Archbishop, 'that shall achieve the sword, but doubt not God will make him known.' So he ordained ten good knights to keep watch over the sword.

On New Year's Day the barons proclaimed a jousts and a tournament to keep the lords and commons together till God should reveal who should win the sword. Sir Ector rode to the jousts with his son Sir Kay, who had been knighted at Hallowmas, and young Arthur his foster-brother. As they rode, Sir Kay perceived that he had left his sword at his lodging, and he prayed young Arthur to ride back for it. 'I will well,' said Arthur, and rode fast after the sword. But all the people at the lodging were gone to see the jousts, and he could nowhere find Sir Kay's sword. Then was Arthur wroth, and said to himself, 'I will take the sword that sticketh in the stone; for my brother Kay shall not be without a sword this day.' When he came to the churchyard, he found no knights there, for they were all gone to the jousting. So he handled the sword, and lightly and fiercely pulled it out of the stone, and delivered it to Sir Kay.

Sir Kay wist well that it was the sword of the stone, and said to his father, 'Sir, lo here is the sword of the stone; wherefore I must be king of this land.' But Sir

Ector took Sir Kay and Arthur into the church, and made Sir Kay swear on a book how he came by the sword. 'Sir,' said Sir Kay, 'by my brother Arthur, for he brought it to me.' 'How gat ye the sword?' said Sir Ector to Arthur. 'Sir, I will tell you. When I came home for my brother's sword, I found nobody at home to deliver it to me; and so I thought my brother Kay should not be swordless, and so I came hither eagerly and pulled it out of the stone without any pain.' 'Now let me see,' said Sir Ector, 'whether ye can put the sword where it was, and pull it out again.' 'That is no mastery,' said Arthur, and so he put it in the stone. Then Sir Ector essayed to pull out the sword, and failed. 'Now essay,' he said to Sir Kay. And anon Sir Kay pulled at the sword with all his might, but it would not be. 'Now shall ye essay,' said Sir Ector to Arthur. 'I will well,' said Arthur, and pulled it out easily.

Then Sir Ector and Sir Kay knelt down to the earth. 'Alas,' said Arthur, 'my own dear father and brother, why kneel ye to me?' 'Nay, nay, my lord Arthur, it is not so. I was never your father nor of your blood, but I wot well ye are of higher blood than I weened ye were.' Then he told him all; and Arthur made great dole when he understood that Sir Ector was not his father. 'Sir,' said Sir Ector, 'will ye be my good and gracious lord when ye are king?' 'Else were I to blame,' said Arthur, 'for ye are the man in the world that I am most beholden to, and my good lady and mother your wife, that as well as her own hath fostered me and kept. And if ever it be God's will that I be king, as ye say, ye shall desire of me what I may do, and I shall not fail you. God forbid I should fail you!'

no mastery] nothing calling for skill.

‘Sir,’ said Sir Ector, ‘I will ask no more but that ye will make Sir Kay your seneschal.’ ‘That shall be done,’ said Arthur, and therewithal they went to the Archbishop and told him how the sword was achieved.

And on Twelfth Day all the barons came to essay the sword, but there might none take it out but Arthur; wherefore there were many lords wroth, and said it was great shame to the realm to be over-governed by a boy of no high blood born. So it was put off till Candlemas. At Candlemas many more great lords essayed, but in vain. And as Arthur did at Christmas, so he did at Candlemas, and pulled out the sword easily; whereat the barons were sore aggrieved, and put it off till Easter. And as Arthur sped before, so he did at Easter. Yet some of the great lords were indignant, and put it off once more till Pentecost. But the Archbishop chose good knights, whom King Uther had trusted, such as Sir Baudwin, Sir Ulfius and Sir Brastias, and they were about Arthur day and night till Pentecost.

At Pentecost all manner of men essayed to pull out the sword, but none might prevail but Arthur. He pulled it out before all the lords and commons that were there; wherefore all the commons cried at once, ‘We will have Arthur unto our King! We will put him no more in delay, for we all see that it is God’s will that he should be our King, and who that holdeth against it we will slay him.’ And therewith they all kneeled at once, both rich and poor, and cried Arthur mercy because they had delayed him so long. And Arthur forgave them, and taking the sword between his hands offered it upon the altar where the Archbishop was, and so was made knight of the best man that was there. And so anon was the coronation made. And there was he

sworn unto his lords and the commons to be a true King, to stand with true justice from thenceforth the days of his life. Also then he made all lords that held of the crown to come in and do service as they ought to do, and he redressed all the wrongs that had been done since King Uther's death, and restored their lands to them that owned them. When he had stablished the country about London, he made Sir Kay seneschal, and Sir Baudwin high constable, and Sir Ulfius chamberlain ; and Sir Brastias he made Warden of the North, for the lords beyond Trent were at that time for the most part the King's enemies. But within few years Arthur won all the North, Scotland, and all that were under their obeisance. Also Wales, a part of it held against Arthur, but he overcame them all, as he did the remnant, through the noble prowess of himself and his Knights of the Round Table.

SIR THOMAS MALORY, *Morte Darthur* (abridged).

### (3) *Gawain and the Green Knight*

Of all the tales about the Knights of the Round Table there is none better than the tale of Gawain and the Green Knight. It is not in Malory. It was written at the very time when Chaucer was writing the *Canterbury Tales*. Chaucer and Gower, the two fashionable poets of the day, were both Londoners, and wrote in the London dialect for a courtly audience. But far away in the North-West of England—perhaps in Cheshire, perhaps in Lancashire—there was another poet, or school of poets, writing in a difficult North-Western dialect, whose works, comprising four remarkable poems, have come down to us in a single manuscript. Of the

author, or authors, we know nothing, except that he, or they, possessed genius of a high order. And the best of the four poems, better even than the famous *Pearl*, is the Romance of Sir Gawain and the Green Knight. It consists of bundles of alliterative verses—about 2000 verses in all—each bundle having a short rhymed finial of the kind oddly called ‘bob and wheel.’ And this is the story :

One winter Arthur kept Christmas at Camelot with all his court. Fifteen days they feasted, but when the board was spread on New Year’s eve Arthur vowed that he would not sit at meat until he had seen some wondrous adventure. Even as he spoke, the doors of the hall burst open, and in there rode a huge knight on a huge horse—bigger man or bigger steed was never seen. But more than his size they marvelled at his colour ; for from head to heel he was all as green as grass. His charger was green, his armour was green, his hair was green, and a great green beard lay like a bush on his breast. He bore neither shield nor spear ; but in his left hand was a green holly bough, and in his right a huge Danish axe, sharp as a razor at the edge. No reverence made he as he entered the presence, but paced sternly up the hall among the wondering guests. ‘ Who is the governor of this company ? ’ he called in a great voice. ‘ I am master here,’ said Arthur : ‘ sit down with us and feast.’ ‘ I cannot tarry,’ replied the Green Knight. ‘ I am looking for a man to prove him. I come in peace, as you see ; but if there be any in this company that will give a blow and take it, let him have at me ’ ; and he held out his axe. As the knights sat all silent for fear or for courtesy, ‘ Beardless boys,’ said the Green Knight, ‘ is this your famous Table Round,

whose renown can thus be blown away with the puff of one man's breath?' At that Arthur sprang from his throne, as wild as the wind. 'Big words shall not quell us,' cried he, and, leaping down from the dais, he seized the axe. The Green Knight stroked his beard stiffly and was pulling down his coat when Gawain intervened, that was the most courteous knight and the comeliest in all the court. 'Dear lord and uncle,' he cried, 'let it not be said that our King himself had to take the challenge with so many gallant knights around his board. I am the least and lowliest of them all; yet if it would please you to yield me the game, I would gladly undertake it.' The knights all joined in Gawain's plea, till Arthur reluctantly yielded him the axe. 'Tell me your name,' said the Green Knight; and when Gawain told him, 'Then, Sir Gawain,' said he, 'ye shall strike me one blow, on this condition, that ye bide a buffet from me a year and a day from hence.' 'By the faith of my body,' said Gawain, 'I will; but where shall I seek you a year hence?' 'I will tell you that,' replied the Green Knight, 'when you have struck your stroke. And if I speak no more after your blow, so much the better your hap!' So saying he drew down his surcoat, and put his hair aside, and made bare his neck for the stroke. Gawain heaved up the grim tool, and at one blow shore head from body. But the Green Knight, nothing daunted, picked up his head by the hair, and vaulted on his horse, and wheeled about. Then he turned in the saddle, and the severed head opened its eyes and spoke. 'Sir Gawain,' it said, 'render you at the Green Chapel a twelvemonth and a day from now; and keep well your tryst, or be called recreant.' And with that the Green Knight rode stiffly



out of the hall with his head before him on his saddle-bow.

Christmastide passed, and the sweet spring came, and summer followed and dusty autumn. But when winter with its chilly blasts drew near, Sir Gawain bethought him of his pledge. At Hallowmas he went to King Arthur and begged leave to go from the court that he might keep his tryst. So they armed him with shoes and greaves and hauberk of steel, and his coat-armour over all; and when he had heard mass he mounted his good steed Gringolet and rode away on his quest. He rode through all the breadth of England—it were long to tell all the perils he was in from wolves and wild men; but nowhere could he hear of the Green Chapel. From Holyhead he crossed to North Wales, then passed the Dee into Wirral. Christmas Eve found him on the edge of a dark forest, where the brown streams rolled beneath banks of snow. The good knight crossed himself and prayed that he might find some harbour, where he might hear mass on the morrow and keep the holy feast of Christmas. Anon in answer to his prayer he spied a fair castle of hewn stone. The porter opened the gate at his call, and welcomed him in. In the courtyard were many squires, who gladly helped him to dismount and unarmed him. They rejoiced when they heard that he was of the Table Round, 'For now,' they said, 'we shall see noble manners and hear courteous speech'; and they led him to the lord of the castle. A big bold man he looked, with a bushy beard.

Together they went to prayers, and in the chapel they met the fair young lady of the castle, and a wrinkled, ancient dame who was her companion. Gawain made obeisance to the elder lady, but the

younger, by her husband's leave, he kissed. Then they supped and made merry together. Christmas Day and the days that followed were spent in feasting and merriment; but on the fourth evening Gawain told the castellan of his tryst. 'Trouble not for that,' said the bold baron, 'the Green Chapel is not a league away. But do you keep your chamber to-morrow, and rest after your travail, while I go a-hunting. And let us make a covenant that whatever each of us wins to-morrow he will give to the other.' So it was agreed. On the morrow, then, the baron went out to hunt the deer, but Gawain kept his chamber. At noon the lady of the castle sent for him, and when he came to her parlour she mocked him a little for a sluggard; and then she began to court him, offering him her love. But Gawain daffed her wooing aside with all courtesy, vowing still to be her true servant ever, till at length she laughed and kissed him and let him go. In the evening the baron came home with a noble quarry and gave it all to Gawain, who in return gave him a kiss. 'Where got ye that kiss?' said the baron; but Gawain answered with a smile, 'Telling was not in our bargain.' So they supped together in mirth. Next day it was the same: in the evening the baron gave Gawain a great boar that he had slain, and Gawain repaid him with a kiss. But on the third day, when the baron had gone, the lady came herself into Gawain's chamber. 'Sir Gawain,' she said, 'for all your far-famed courtesy, you have been a churl to me, refusing all my gifts. But take at least this green girdle for a keepsake.' When Gawain would have refused, 'Nay,' she cried, 'you would not refuse if you knew the virtues of this girdle. For he that wears it can never be wounded.' Gawain

faltered at that, when he thought of his tryst with the Green Knight. So she gave him the girdle with a kiss, and he took it and bound it round his body. And at



#### THE LADY OF THE CASTLE TEMPTS SIR GAWAIN

night, when the baron brought him the brush of a fox that he had killed, he gave him the kiss ; but he said no word of the girdle.

Early next morning Sir Gawain took horse, and rode

away with a guide that the baron had given him to find the Green Chapel. When they came to the edge of a stream, 'Here,' said the guide, 'I halt. The Chapel lies up this brook a little way, but I go no further, and by my counsel neither will you. For he is a grim wight that keeps the Green Chapel, and slays every passer-by : knight or churl, monk or mass-priest, he spares none. Take a plain man's rede, and ride you back softly to Arthur's court, and never man shall be the wiser for me.' Gawain smiled and shook his head, and held on up the brook alone. Still he could see no building. But presently he came on a green mound, and as he walked round it, wondering whether this might be the Green Chapel, there came from the hill-side beyond the brook a furious whirring noise, as if a man were sharpening a scythe on a grindstone. 'Bide you there,' cried a loud voice, and forthwith the Green Knight came leaping down the brae with his Danish axe in his hand. He vaulted lightly over the brook, using his axe-haft as a pole. 'So you are come to keep your tryst, Sir Gawain,' he said. 'Are you ready to bide my buffet?' 'I am ready,' said Gawain, and putting his hair aside he made bare his neck for the blow. The Green Knight feinted at him with the axe, and when Gawain saw the bright blade descending he flinched. 'Do you flinch, sir knight?' said the Green Knight sternly. 'I did flinch a little,' said Gawain, 'but I will not do so again.' Once more the Green Knight feinted to strike, and once more Gawain flinched. 'Recreant!' cried the Green Knight; 'did I flinch when my head flew to my foot?' 'I will not flinch from the third stroke,' said Gawain, and stood stiffly up. . The Green Knight heaved his axe

rede] counsel.

and brought it down on Gawain's neck, lightly, but so that it drew blood. Swiftly Gawain threw his shield before him—for it had hung at his back—and swiftly he plucked out his sword and stood on guard. 'Have at you if you strike again,' he cried; 'our bargain was but for one blow.' The Green Knight laughed and grounded his axe, and behold, it was the lord of the castle! 'Be satisfied, good knight and true,' he said. 'I promised you one blow and you have had it. Nay, you had gone quite scatheless, but that in one thing you faulted a little. You took my green girdle from my wife and did not give it to me according to our covenant, but kept it about your body to save your skin.' 'Curse on cowardice and covetise,' groaned Gawain. 'I confess my fault'; and with that he plucked off the green girdle and offered it to the Green Knight. 'Nay, keep it,' said he, 'for a remembrance, and come back with me to my castle that I may make you known to your aunt. For that ancient dame whom you saw is none other than Morgan la Fay, King Arthur's own sister; and all this has been done through her witchcraft, to spite Queen Guinevere and shame the Table Round.' But Gawain excused himself courteously and rode sadly back to Camelot. All the lords and ladies joyed to see him return; but in Gawain there was no joy. He told them all his adventure truly, and showed them the wound in his neck. Then, groaning with grief and shame, he drew forth the green girdle. 'See here the badge of blame,' he said. 'I will wear it all my life in remembrance of my cowardice. And if ever pride pricks me, one glance at this girdle will humble me again.' Thereupon, to comfort Sir Gawain, all the knights vowed to do likewise; and from that day forth every knight of

the Round Table wore a green belt for Gawain's sake, and he that wore it was honoured ever after.

*Adapted from the Middle English Romance.*

#### (4) *The Death of Arthur*

When King Arthur was established on his throne, he resolved to take to himself a wife, and, having seen the beauty of Guinevere, the daughter of the old king of Logres, he sent Sir Launcelot of the Lake, the chief of all his knights, to ask her hand in marriage. But when Launcelot and Guinevere met, they loved each other at first sight. So Launcelot, wooing her for another, won her for himself. Nevertheless he brought her back to Camelot, where she was wedded to the King with great pomp and ceremony ; but Launcelot had her heart as she had his. Yet in all things else Launcelot was a true vassal to his King, and the greatest knight of all the Table Round. For long no breath of slander sullied the Queen's name ; but at length whispers began to creep about the court. Then Sir Mordred, who was one of the King's nephews, and jealous of Launcelot's fame, set an ambush, hoping to catch Launcelot in the Queen's chamber, and there kill him. But Launcelot, who was a mighty man of his hands, burst through the ambush, slaying many of those who lay in wait for him, among them Gawain's brother Sir Agravaine, and so escaped to his castle of Joyous Gard. When Arthur heard of this, he was wild with rage and grief, and commanded to seize Guinevere and burn her at the stake. But when she was being led to the burning, suddenly Launcelot with his kinsmen fell upon her guards ; and in the mêlée Launcelot unhappily killed two unarmed knights, Sir



Gareth and Sir Gaheris, brothers of Gawain ; then he caught up Guinevere to his saddlebow and carried her off to Joyous Gard.

Tidings of these things came to the Pope in Rome. His heart was sad to think that there should be enmity between two who had done so much for Christendom. Wherefore he sent a bull to King Arthur, under seals of lead, commanding him on pain of interdict to take back his Queen and be accorded with Sir Launcelot. And Arthur obeyed for the time. But anger still rankled in his heart, and still Sir Gawain clamoured for vengeance for the death of his three brothers, which Launcelot perceiving withdrew overseas with his kin to his castle of Benwick in France (for in France also he had great possessions). Then by Gawain's persuasion the King declared war on Launcelot, and followed him overseas with a great host to lay siege to Benwick, leaving Sir Mordred behind as regent in England. Now though Launcelot had a great force with him in Benwick he refused to come out and do battle with Arthur, for he would not raise his hand against the King who had knighted him. Then Sir Gawain rode up to the town-gate, and cried with a loud voice, 'Thou false traitor, Sir Launcelot, why hidest thou in holes like a coward ? Come out, false traitor knight, and here I shall revenge upon thy body the death of my three brothers.' When Launcelot's kinsmen heard these words they all came round him and said at once, 'Sir Launcelot, now must ye defend you like a knight, or else be shamed for ever, for now he has appealed you of treason.' 'God help me,' said Sir Launcelot, 'I wot that as well as ye.' And he called aloud to Arthur from the walls, 'Noble King that made me knight, my heart is heavy that ye pursue me

thus, and it is greatly against my will that ever I should fight against any of your blood ; but now I may not avoid it, I am driven thereto as a beast to a bay.' So saying he took his spear in hand, and rode forth to encounter Sir Gawain. Now Sir Gawain had this grace by gift of a holy man that his strength increased every hour from nine of the morning till at noon he had thrice his natural strength<sup>1</sup>; but after noon it diminished again. As his strength waxed he pressed harder and harder on Sir Launcelot, so that Launcelot, for all his peerless knighthood, had much ado to defend his life. But at noon Sir Gawain's strength began to abate, and Sir Launcelot in turn pressed upon him, and dealt him a grievous wound on the head that felled him to the earth. As he turned away, Sir Gawain cried, 'Turn again, false traitor, and slay me. For I shall never leave thee till thou be slain or I.' 'I shall endure you, sir,' replied Launcelot, 'but I will never smite a fallen knight'; and so went back into the town. And the leeches carried Sir Gawain to his tent and tried to heal his wound.

But before it was truly healed came news that Mordred had made himself king in England. So Arthur raised the siege of Benwick, and hastily took ship for Dover, where Mordred opposed his landing. In the battle Mordred was put to flight, but Gawain was wounded to the death. Arthur made great moan when he found Gawain laid so low : he took him in his arms and cried, 'Alas, my sister's son, in Sir Launcelot and you I most had my joy and my trust, and now I have lost you both.' 'My uncle King Arthur,' said Gawain, 'my death-day is come, and all through my own wilful-leeches] physicians.

ness. Let me have pen and paper, I pray, that I may write to Sir Launcelot.' Then Arthur propped him up and he wrote : ' Unto Sir Launcelot, flower of all noble knights that ever I heard of or saw by my days, I, Sir Gawain, King Lot's son, of Orkney, sister's son unto the noble King Arthur, send thee greeting, and let thee have knowledge that the 10th day of May I was smitten upon the old wound that thou gavest me afore the city of Benwick, and through that same wound I am come to my death-day. For of a more nobler man might I not be slain. And I will that all the world wot that I, Sir Gawain, Knight of the Table Round, sought my death, and not through thy deserving, but it was mine own seeking, wherefore I beseech thee to return again to this realm and see my tomb and pray some prayer for my soul. Also, Sir Launcelot, for all the love that ever was between us, make no tarrying, but come over the sea in all haste, that thou mayest rescue that noble King that made thee knight, for he is hard bestead with a false traitor, my half-brother Sir Mordred, who hath crowned himself king.' This letter Sir Gawain subscribed with part of his heart's blood, and having received the sacrament, at the hour of noon he yielded up the spirit. Such was the end of the prince of courtesy.

When he had buried Sir Gawain, King Arthur gathered to him such men as he could and marched west to find Sir Mordred. The two armies met on a down beyond Salisbury, not far from the sea. But in the night before battle should be joined the ghost of Gawain appeared to Arthur, and warned him not to fight on the morrow, but to make a treaty with Mordred for a month ; for before a month's end Sir Launcelot and his kinsmen would arrive from overseas to help him against

the traitor. On the morrow therefore King Arthur sent a flag of truce to Mordred, and the two met between the hosts, each with fourteen knights attending, to make a treaty. But either mistrusted other, and before they advanced to the meeting each said to his men, 'If you see a sword drawn, charge fiercely at once.' They had met then and come to accord, and wine had been brought that they might pledge each other, when an adder crept out of a heath-bush, and bit a knight in the foot. Unthinkingly he plucked out his sword to kill it. At sight of the drawn sword both hosts shouted grimly and charged. And so by ill-hap the battle was joined, the most doleful ever seen in Christian land. For they fought all the long day, and at nightfall one hundred thousand lay dead on the down. When Arthur looked about him and saw that of all his host was none alive but himself and Sir Bedevere, 'Alas,' he cried, 'I am come to my end. But would to God that I could see that traitor Mordred, that has caused all this mischief.' Even as he spoke he spied Mordred standing alone, leaning on his sword among a heap of dead. At the sight Arthur gripped his spear in both hands, and ran upon Mordred, crying, 'Traitor, now is thy death-day come,' and drove the spear through his body more than a fathom. When Mordred felt that he had his death's wound, he writhed up to the bur of the spear, and swinging his sword with both hands smote his king and uncle on the head, so that the sword pierced helm and brain-pan; and therewith Sir Mordred fell stark dead. Then Sir Bedevere ran up and raised King Arthur and carried him to a little chapel not far from the sea. When Arthur came to himself he said, 'My bur] thick part of spear above the handle.

time hieth fast. Therefore take Excalibur my good sword and throw it in that water, and tell me what thou seest.' So Sir Bedevere took the sword, but as he went towards the water he looked upon it; the pommel and the hilt were all of gems, and he said to himself, 'If I throw away this rich sword, thereof shall come harm and loss'; and he hid Excalibur under a tree, and returned, and told the King that he had done his bidding. 'What sawest thou there?' said the King. 'Sir,' said he, 'I saw nothing but waves and winds.' 'That is untruly said,' said the King; 'go and do my command, as thou art lief and dear.' Then Bedevere went again, and took the sword, and again he thought it sin and shame to throw away that noble sword; so he hid it, and returned to the King, and told him that he had done his commandment. 'What sawest thou there?' said the King. 'Sir,' he said, 'I saw nothing but the waters wap and the waves wan.' 'Ah, traitor untrue,' said King Arthur, 'now hast thou betrayed me twice. If thou do not now as I bid thee, I shall slay thee with mine own hands.' Then Sir Bedevere ran and took the sword, and threw it as far into the water as he might; and there came an arm and an hand above the water, and met it, and caught it, and so shook it thrice and brandished, and then vanished away the hand with the sword in the water. So he came back to the King and told him what he saw. 'Alas,' said the King, 'help me hence, for I dread I have tarried over long.' Then Sir Bedevere took the King upon his back, and so went with him to that water-side. And when they were at the water-side, even fast by the bank hoved a little barge, with many fair ladies in it, and among them all

wap] lap.

hoved] floated.

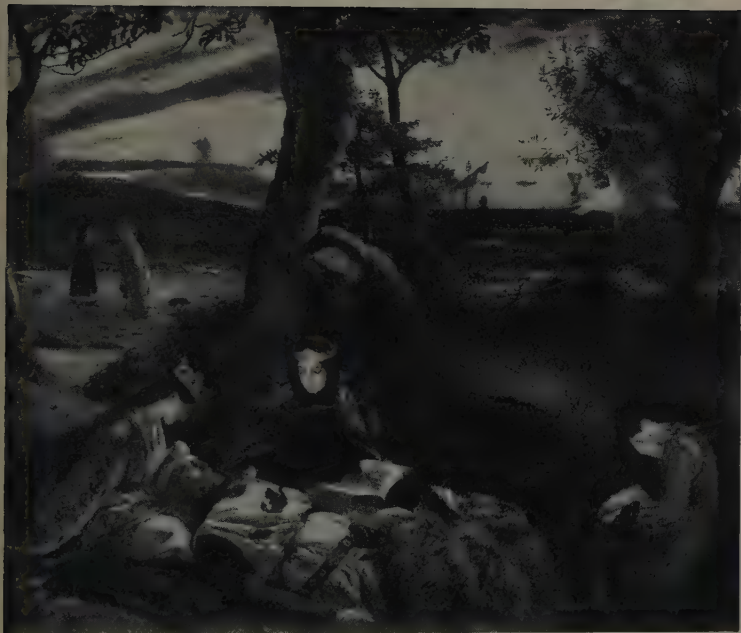
was a Queen, and all they had black hoods, and all they wept and shrieked when they saw King Arthur. 'Now put me into the barge,' said the King; and so he did softly. And there received him three queens with great mourning, and so they set him down, and in one of their laps King Arthur laid his head, and then that queen said, 'Ah, dear brother, why have ye tarried so long from me? Alas, this wound on your head has caught overmuch cold.' And so then they rowed from the land. Then Sir Bedevere cried, 'Ah, my lord Arthur, what shall become of me?' 'Comfort thyself,' said the King, 'and do as well as thou mayest; for in me is no trust for to trust in. For I will into the Vale of Avilion, to heal me of my grievous wound. And if thou never hear more of me, pray for my soul.' Then the barge was lost to sight.

And most believe that King Arthur died that same night, and was buried in the hermitage at Glastonbury. Yet some men yet say in many parts of England that King Arthur is not dead, but had by the will of our Lord Jesus in another place, whence he shall come again and shall win the holy cross. And so I leave to speak of Arthur.

SIR THOMAS MALORY, *Morte Darthur* (abridged).

NOTE ON THE ARTHURIAN LEGENDS.—Arthurian romances, as I have said, were immensely popular in the Middle Ages. Even when they ceased to be composed, they remained the favourite reading of the ordinary English reading public, such as it then was, till near the end of the sixteenth century; and, broken down into ballads, they reached a wider audience through oral rendering. The splendour of Elizabethan poetry eclipsed but did not extinguish them. To them Spenser owed the scenery, the atmosphere, and some of the characters of his *Faerie Queene*. Milton meditated a great poem on King Arthur. Arthurian romance fed the boyish imaginations of Wordsworth, Coleridge and Scott. Arnold, Swinburne and Morris in the nineteenth century, and Mr. Binyon in the twentieth, have found inspiration in the stories





MORT D'ARTHUR

From the picture in the Tate Gallery, London, by  
James Arthur

*Photograph Mansell*

of Arthur, of Launcelot and Guinevere, of Tristram and Iseult. Above all, the Arthurian legend haunted Tennyson from youth to extreme old age : he gave many years to re-setting it in his *Idylls of the King*. The following extract from his *Morte d'Arthur* should be compared with Malory's version.

(5) *The Passing of Arthur*

But as he walk'd, King Arthur panted hard,  
Like one that feels a nightmare on his bed  
When all the house is mute. So sigh'd the King,  
Muttering and murmuring at his ear, ' Quick, quick !  
I fear it is too late, and I shall die.'

But the other swiftly strode from ridge to ridge,  
Clothed with his breath, and looking, as he walk'd,  
Larger than human on the frozen hills.

He heard the deep behind him, and a cry  
Before. His own thought drove him, like a goad.  
Dry clash'd his harness in the icy caves  
And barren chasms, and all to left and right  
The bare black cliff clang'd round him, as he based  
His feet on juts of slippery crag that rang  
Sharp-smitten with the dint of armed heels—  
And on a sudden, lo ! the level lake,  
And the long glories of the winter moon.

Then saw they how there hove a dusky barge,  
Dark as a funeral scarf from stem to stern,  
Beneath them ; and descending they were ware  
That all the decks were dense with stately forms  
Black-stoled, black-hooded, like a dream—by these  
Three Queens with crowns of gold—and from them rose  
A cry that shiver'd to the tingling stars,  
And, as it were one voice, an agony  
Of lamentation, like a wind that shrills  
All night in a waste land, where no one comes,  
Or hath come, since the making of the world.

ALFRED, LORD TENNYSON.

## II

### THE CORONATION OF CHARLEMAGNE, 800

At length the fulness of time was come, and Charles, attended probably by all his Frankish courtiers and by a multitude of the citizens of Rome, went to pay his devotions on the morning of Christmas Day in the great basilica of St. Peter. If we would imagine its appearance at the close of the eighth century, or indeed at any period before the beginning of the sixteenth century, the chief requisite is absolutely to exclude from our mental vision the vast Renaissance temple which Julius II and Leo X, which Bramante and Raffaele and Michael Angelo have reared upon the Vatican hill. Let us follow Charles and his nobles in imagination to the great basilica on the morning of Friday the 25th of December, 800. They mount up from the banks of the Tiber by a long colonnade which stretches all the way from the castle of S. Angelo to the threshold of St. Peter's. They reverentially ascend the thirty-five steps to the platform, on which the Pope and all the great officers of his household stand waiting to receive them. Charles himself, 'In shape and gesture proudly eminent,' with his yellow locks tinged with grey and with some

Julius II. and Leo X.] Popes who rebuilt St. Peter's.  
Bramante] the architect who designed the additions.  
Raffaele and Michael Angelo] painters who decorated them.  
In shape . . . eminent] *Paradise Lost*, i. 590.

furrows ploughed in his cheeks by the toils of twenty Saxon campaigns, towers above the swarthy, shaven ecclesiastics who surround the Pope. All Roman hearts are gladdened by seeing that he wears the Roman dress, the long tunic with the scarf thrown over it, and the low shoes of a Roman noble, instead of the high laced-up boots of a Teutonic chieftain.

After the usual courteous salutations, the blended train of nobles and churchmen follow Hadrian and Charles into the basilica. They traverse first the great *atrium*. In the centre rises the great fountain called Pinea, the water spouting forth from the top and from every bossy protuberance of an enormous fir-cone. Round the fountain have begun to cluster the marble tombs of the Popes of the last four centuries.

They pass on : they enter the basilica proper, consisting of five naves (the central nave much wider than the rest), divided from one another by four rows of monolith columns. These columns are ninety-six in number, of different materials, granite, Parian marble, African marble ; and they have very different histories ; some, it is said, being brought from the various temples of heathen Rome. They are of unequal height ; and not only this inequality, but many signs of rough work, notwithstanding all the splendour of gold and silver plates and the vivid colouring of the mosaics on the walls, give evidence of the haste with which the venerable fabric was originally reared in the days when Christianity could yet scarcely believe in the permanence of its hardly-won victory over heathenism.

Hadrian] the Pope.

*atrium*] court open to the sky.

monolith] made of a single stone.

Between the pillars of the central nave are hung (as it is a feast day) costly veils of purple embroidered with gold, and at the further end of the church the gigantic cross-shaped candelabra, hanging from the silver-plated frame-work of the triumphal arch, with its 1,370 candles, lights up the gloom of the December morning. This triumphal arch, which, with the long colonnade leading up to it, was an essential feature of the early Roman basilica, is doubtless adorned with mosaics of saints and martyrs, and spans the entrance to the apsidal tribune, which is the very Holy of Holies of Rome. For here, before and below the high altar, is the *confessio* or subterranean cave in which the body of St. Peter, rescued from its pagan surroundings, the circus of Nero and the temples of Apollo and Cybele, is believed to repose in the coffin of gilded bronze provided for it by the reverent munificence of the first Christian Emperor. Over the high altar rises a baldacchino supported by four porphyry columns, and by others of white marble twisted into the resemblance of vine-stems. Keeping guard as it were in front of the *confessio* are many statues of saints and angels. Here, as if in bold defiance of all the edicts of iconoclastic Emperors, Gregory III has reared an *iconostasis* covered with silver plates, on which are depicted on one side the likenesses of Christ and His Apostles, on the other those of the Virgin Mary and a train of holy maidens; and following in his footsteps Hadrian has placed near the *iconostasis* six images made of silver plates covered with gold. At the

apsidal tribune] raised platform under the apse at east end of basilica.

Nero] a pagan Emperor of Rome.

Apollo and Cybele] pagan deities of Rome.

baldacchino] canopy.

*iconostasis*] image-stand.

entrance of the choir stands the image of the Saviour, with the archangels Gabriel and Michael on either side of Him, and behind, in the middle of the choir, is the Virgin Mother, flanked by the Apostles St. Andrew and St. John. All the floor of this part of the basilica is covered with plates of silver. Behind, at the very end of the church, is seen the chair of St. Peter's successor, with seats for the suburbicarian bishops—the cardinal-bishops, as they are already beginning to be called—in the curve of the apse on either side of him.

Such then was the great and venerable building, encrusted with memories of half a thousand Christian years, in which Charles the Frank knelt on the Christmas morning of the year 800 to pay his devotions at the *confessio* of St. Peter. Assuredly if he himself was ignorant of what was about to happen, neither the Roman citizens nor the Frankish courtiers shared his ignorance. Assuredly there was a hush of expectation throughout the dim basilica, and all eyes were directed towards the kneeling figure in Roman garb at the tomb of the Apostle.

Charles rose from his knees. The Pope approached him, and lifting high his hands placed on the head of the giant king a golden crown. Then all the Roman citizens burst into a loud and joyful cry: 'To Carolus Augustus, crowned by God, mighty and pacific Emperor, be life and victory.' Thrice was the fateful acclamation uttered. Then all joined in the 'Laudes,' a long series of choral invocations to Christ, to angels, to apostles, to martyrs, and to virgins, praying each separately to grant the newly-crowned Emperor heavenly aid to conquer all his foes.

suburbicarian bishops] bishops of dioceses near Rome.





### THE POPE AND THE EMPEROR

St. Peter giving Spiritual Power (represented by a Stole) to the Pope, and Temporal Power (a Banner) to Charlemagne. From a ninth-century restored mosaic in the Lateran, Rome.

Thus the great revolution towards which for three generations the stream of events had been steadily setting was accomplished. Once more an Emperor of the Romans had been acclaimed in Rome, the first of that long line of Teutonic Augusti, the last of whom laid down the true Imperial diadem in the lifetime of our fathers at the bidding of the son of a Corsican attorney.

THOMAS HODGKIN, *Italy and her Invaders.*

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## TIMOUR THE TARTAR

BAJAZET was called away from Constantinople to meet the challenge of a rival conqueror, of his own faith and stock, but one before whose terrible ambition and greatness Bajazet is dwarfed and overshadowed, and his broad Ottoman realm dwindles down into the dimensions of a province. Timour was the last and the most remarkable of those Tartar wanderers, in whom the boundless and lawless liberty of the Steppes awakened the dream of the mastery of the world; who, driven onwards by a frenzied and devouring enthusiasm that could not stop, and bursting by their grim energy through all that barred their way, were able for a time to bind the civilisation of Asia to the throne of the

the last . . . attorney] In 1806 Napoleon formed the German States, other than Austria and Prussia, into the Confederation of the Rhine, which separated itself from the Empire; whereupon Francis II. resigned the empty title of Holy Roman Emperor and took that of Emperor of Austria.

Bajazet] Sultan of the Turks from 1389 to 1403. Conquered most of the Balkans.

Timour] better known to us as Tamerlane.

Northern wilderness : and who, even after that throne had crumbled, left indelible traces of their character, their deeds and thoughts, on the memory, the history, and the legislation of the polished races of the South.

LOW.



TARTARS ON THE MOVE

Timour held the conqueror's spell over his savage brethren. Lured by that spell from their bleak, endless plains, and forbidding wastes, their roaming camps were once more gathered together for battle, under a chief who was able to break them to his discipline, and bend them as one man to the single aim of his vast ambition. Once more, and for the last time, the

Mongol war-cry of '*forwards*' passed from land to land, across the Oxus, across the Volga, across the Euphrates, across the Indus, and at last across the Halys. About the time that Amurath the Victorious led the Ottomans into Europe, Timour began to conquer. While they had been advancing from the Hellespont to the Danube and the Euphrates, Timour had dashed to pieces power after power, from the deserts of Tartary to those of Arabia, from the shores of the Caspian to the fountains of the Ganges; he went onward, where Alexander and Genghis had turned back: the historic lands of Asia, the seats of her proudest kingdoms, the cradles and homes of her highest civilisation—Persia and Chaldæa, Armenia and Hindostan—were joined in a common wreck with the barbarian thrones of Turkistan and Russia, to form a Tartar empire; over their impregnable fortresses, their fairest and greatest cities, Ispahan, Bagdad, Delhi, Damascus, his sword had passed, like the lightning or the pestilence, and left them without man or beast, marked by their reeking walls and pyramids of human skulls;—spoiled, that by their arts and industry Samarcand might be adorned; ruined, that Samarcand might be left standing alone, the one great city of the Tartar reign; while during the forty years that his armies traversed to and fro, and his horse-hoofs marked the soil, the lands of civilised man,—of those who are nourished by the wheatsheaf, the vine, and the olive,—tilth and garden, orchard and watered meadow, seemed yielding to the encroachments of his native steppe, to furnish hunting-grounds for his game, or unpeopled pastures for the horses and

Genghis] Genghis Khan, an earlier Mongol conqueror (1162-1227).

flocks, whose flesh and milk was the food of his race. The perfect and favourite number of the Tartars, nine, had been all but fulfilled and multiplied in the dynasties he had annihilated, and the crowns he had united on his head ; *almost* nine princely houses, thrice nine separate lands, were reckoned when he told the sum of his conquests,—one more great family was wanting to complete the tale when he marched against Bajazet ; and the dynasty of the Ottomans made the ninth.

Such was the fierce destroyer of men whom Bajazet had now to meet ; a grimly earnest, lame old man, with long white hair, hair which had been white from his infancy, flowing from his massy head and open brow,—a man who hated jests and lies,—grave and weighty in his sayings, finding his solace in complicated games of chess, or in discussing with his scheiks abstruse and thorny questions of theology or casuistry ; a man who never forgot, never desisted, never regretted the past or repented of what he had done ; a man before whom the gems and gold of Asia had been showered, and who had all its glories and delights at his command ; yet after nearly half a century of war and victory—war almost without a break, and victory without a reverse—was neither enervated nor wearied ; who was to go on till his last breath, conquering, planning, and building up with restless and sagacious energy—whose organising mind had covered Asia with a network of rapid communications and watchful intelligence, and had introduced obedience, subordination, a rule of array and equipment, and a method of systematic and well imagined tactics, among his swarming hordes ; who spent his life in wasting Asia, yet was full of wise thoughts of statesmanship, and is named as one of the founders and

sources of Asiatic law :—a man, merciless as death, to whose horrible butcheries of his Moslem brethren, the bloody morrow of Nicopolis seems but an excusable catastrophe of war ; yet who professed the stern piety and benevolence of the Koran, who deigned to disclaim the character of a man of blood, and to throw the burden of what he had shed on his enemies ; and who, in the height of his pride, took pleasure in contrasting the magnificence of his fortune with his crippled body, and in ostentatiously confessing that in all that he had achieved or won, he felt himself but the frail and feeble instrument of the hand of God.

Nearly forty years before, Ottomans and Mongols had each gone on their way to conquer ; at the end of that time they met. It was but natural that the conqueror, who had spared no Mahometan house or kingdom, and who had been driven by the frenzy of universal dominion to the plains of India and the wastes of Russia, should refuse to turn back from any boundary that his horses could overleap or swim. Yet Timour does appear to have been indisposed to break in on the territories of the Ottomans ; he came, and marked his coming by the destruction of a great city, and then turned away ; and Bajazet seems to have wantonly tempted and drawn aside the tempest from its path. At any rate, if the shock must have come, and his last and proudest crown had still to be won by Timour, either by voluntary homage or war, he was not suffered to want a pretext by the insolence of Bajazet. Irritating messages and words of scorn were exchanged by both ; but the pride of Timour was dignified and self-

Nicopolis] in Bulgaria. Here in 1396 the Turks defeated the Hungarians.



possessed, compared with the furious and frantic defiance of the most sacred laws of Eastern right and courtesy, which Bajazet displayed to the ambassadors and the personal honour of Timour. 'The son of Murad is mad,' he said, when the last insult that an Oriental can offer or endure was cast in his face ; and he gave the decisive order to go forward against Anatolia. Bajazet, who had the city of the Cæsars in his grasp, who had been dreaming of planting his horse-tails even in their Western seat, could only be brought to look upon Timour as an adventurous and lucky freebooter of the desert. His soldiers were murmuring for their pay, and he refused to open his treasures. His chiefs warned him of the numbers of the invading cavalry, and urged him to avoid the plains and occupy the passes and the hills ; but his only care was to find and exterminate them in open battle. He hastened to the frontier. They too were hastening on ; they swept forward, and passed him far on his flank ; and when he had lost their trace, and was waiting for them to appear, he heard of them many marches behind him. They were between him and his capital, assailing the great fortress of Angora which defends the road. He had to seek them once more in the very heart of his dominions. This time they did not disappoint him. He found the Tartar host well posted, entrenched and ready. In the infatuation of his pride, to exhibit before their eyes his scorn of their power, he exhausted his already wearied soldiers with the vainglorious spectacle of an Oriental hunting-party. The Tartars, meanwhile, were busy in

the city of the Cæsars] Constantinople.  
horse-tails] the Ottoman standard.  
their Western seat] Rome.

cutting off or spoiling the water-springs by which the Ottomans were supplied. Then came the day of battle. It would be a perilous attempt to estimate the numbers on an eastern battlefield, described by eastern chroniclers. But there can be no doubt that many years had passed since a muster and a shock, like that of the Mongol and Ottoman powers on the plains of Angora, had been witnessed in the East. There, in Bajazet's line of battle, were arrayed—Christians and Moslems once more together—the conquerors of Nicopolis ; on the left, Stephen, with his black Servian cuirassiers, who had broken the last reserves of the Hungarian army ; and in the centre the compact and stubborn lines of the Janissaries. But on Bajazet's right were masses of the unsteady and discontented troops of Asia, whose hereditary princes were in the camp of Timour, and Tartar colonists from Thrace, won over by Timour's emissaries to the side of their former kinsmen. A stately array of elephants is said to have formed the van of Timour's army ; but his real strength was the broad and open plain. There his overwhelming numbers found space and play for the unrelaxing impetuosity of their successive charges. They overlapped, they tore asunder the Ottoman line ; they surrounded, they burst, in repeated assaults, on its divided fragments. Large bodies of the Asiatic troops, with the Tartar auxiliaries, went over to Timour. The Servian horsemen fought hard and dangerously, but they were wedged together by swarming throngs, as the French knights had been at Nicopolis, and perished as they did. Stephen, on his barded war-horse, broke through the press, and made his way to where Bajazet barded] protected with armour.

had retired to a rising ground, and with the impenetrable and unshaken Janissaries maintained the conflict when it had ceased everywhere else. Stephen urged Bajazet to escape, but he refused. Despair or hope still bound him to that fated field, where his bravest and his dearest dared not abide with their master and father. All fled before the inevitable ruin—chiefs like Stephen and Evrenos, officers like the Grand Vizier, the Aga of the Janissaries, the Captain of the Horse-guards—his surviving sons, each as chance opened a way through the Tartars, one westward to Europe, another eastward to the Pontic mountains, another southward to the crags of Taurus. But all day long, from morning to nightfall, under the blazing July sun,<sup>1</sup> the Janissaries, faint with thirst, and falling fast under the Tartar onslaughts, held on without flinching for the last chance of retrieving their master's fortune ; and he held on with them. But that fortune, so dazzling and so unchequered, had that day run out its term. Night came down on his thinned and sinking footmen, and he saw that on the field there was nothing more to be done. He was persuaded to mount and fly. But beyond the spears of the Janissaries, the Tartar horsemen were masters of the plain. His horse stumbled or stopped to drink ; and he was taken. The titular head of the royal tribe of the Mongols, the lineal heir of Genghis, now a vassal chief in the Tartar host, led the Sultan of the Ottomans to the tent of his conqueror.

RICHARD WILLIAM CHURCH, *Miscellaneous Essays*.

<sup>1</sup> 20th July, 1402.

*built by Constantine here. 4th century*

## THE FALL OF CONSTANTINOPLE, 1453

FOUR Turkish sultans reigned between the wretched Bajazet and the conqueror of Constantinople.

Amurath II, last of the four, having died at Adrianople in 1451, his son Mahomet, crossing rapidly to Europe, was crowned second sultan of that name. He

was a terrible compound of fine literary taste with revolting cruelty and lust. One of his very first acts after he became sultan was to cause his infant brother to be drowned, while the baby's mother was congratulating him on his accession.



MAHOMET II *metaphor.*

From a woodcut of 1603

The throne of the Eastern Empire was then filled by Constantine Palaeologus, no unworthy wearer of the purple.

Limb after limb had been lopped from the great trunk. There was still

life in the heart, though it throbbed with feeble pulses; but now came the mortal thrust.

After more than a year of busy preparation, 70,000 Turks, commanded by Mahomet II in person, sat down in the spring of 1453 before Constantinople. Their lines stretched across the landward or western side of the triangle on which the city was built. A double

wall, and a great ditch 100 feet deep, lay in their front ; and within this rampart the Emperor Constantine marshalled his little band of defenders. A little band indeed it was, for scarcely 6000 out of a population of more than 100,000 souls would arm for the defence of the city ; and Western Christendom was so dull or careless, that, with the exception of 2000 mercenaries under Giustiniani, a noble of Genoa, these had no foreign aid. The harbour of the Golden Horn, guarded by a strong chain across its mouth, sheltered only fourteen galleys. The Turkish fleet consisted of 320 vessels of different sizes.

The siege began. On both sides cannon and muskets of a rude kind were used. One great gun deserves special notice. It was cast by a European brassfounder at Adrianople, and threw a stone ball of 600 pounds to the distance of a mile. But such cannon could be fired only six or seven times a day. Lances and arrows flew thick from both lines ; and heavy stones from the balists filled up the pauses of the cannonade.

At first fortune seemed to smile on the besieged. A vigorous assault of the Turks upon the walls was repulsed, and the wooden tower they had used in the attack was burned.

One day in the middle of April the watchmen of the besieged saw the white sails of five ships gleaming on the southward horizon. They came from Chios, carrying to the beleaguered city fresh troops, wheat, wine, and oil. The Greeks, with anxious hearts, crowded the seaward wall. A swarm of Turkish boats pushed out to meet the daring barks, and, curving in a crescent shape, awaited their approach. Mahomet,

balists] catapults.

riding by the edge of the sea, with cries and gestures urged his sailors to the attack. Three times the Turks endeavoured to board the enemy; but as often the flotilla reeled back in confusion, shattered with cannon shot and scorched with Greek fire, while the waters were strewn with the floating wreck of those vessels, which were crushed by collision with the heavy Christian galleys. Steadily onward came the five ships, safe into the harbour of the Golden Horn. The Turkish admiral was doomed by the furious sultan to be impaled; but the sentence was commuted to one hundred blows with a golden bar, which, we are told, Mahomet himself administered with right good will.

Then came the turning point of the siege. The sultan, feeling that his attack by land must be seconded by sea, formed a bold plan. It was to convey a part of his fleet overland from the Propontis, and launch them in the upper end of the harbour. The distance was six miles; but by means of rollers running on a tramway of greased planks, eighty of the Turkish vessels were carried over the rugged ground in one night. A floating battery was then made, from which the Turkish cannon began to play with fearful effect on the weakest side of the city.

When the attack had lasted for seven weeks, a broad gap was to be seen in the central rampart. Many attempts at negotiation had come to nothing, for Constantine refused to give up the city, and nothing else would satisfy the sultan. At last a day was fixed for the grand assault. At daybreak the long lines of Turks made their attack. When the strength of the Christians

Greek fire] an inflammable liquid of unknown composition.

Propontis] Sea of Marmora.



was almost exhausted in endless strife with the swarms of irregular troops who led the way, the terrible Janissaries advanced. The storm grew louder, the rattle of the Turkish drums mingling with the thunder of the ordnance. Just then the brave Giustiniani, defending the great breach, was wounded ; and when, after this loss, the defence grew slacker, a body of Turks, following the Janissary Hassen, clambered over the ruined wall into the city. Amid the rush Constantine Palaeologus, last of the Cæsars, fell dead, sabred by an unknown hand ; and with him fell the Eastern Empire.

At noon on the same day Mahomet summoned the Moslems to prayer in the church of St. Sophia—thus establishing the rites of Islam where Christian worship had been held ever since the days of Constantine the Great.

It was not, however, the policy of the sultan to root the Greek worship out of the conquered city ; and so, ten days after his victory, we find him installing a new patriarch, and announcing himself to be the protector of the Greek Church. And to fill the ruined and deserted streets of the long decaying city, he transplanted thither crowds from all parts of his empire ; so that once more Constantinople was alive with a busy throng.

W. F. COLLIER, *Great Events of History*.

patriarch] head of the Greek Orthodox Church.

## TWO HEROES

THERE stood the young conqueror of Lepanto, his brain full of schemes, his heart full of hopes, on the threshold of the Netherlands, at the entrance to what he believed the most brilliant chapter of his life—schemes, hopes, and visions, doomed speedily to fade before the cold reality with which he was to be confronted. Throwing off his disguise after reaching Luxemburg, the youthful paladin stood confessed. His appearance was as romantic as his origin and his exploits. Every contemporary chronicler, French, Spanish, Italian, Flemish, Roman, has dwelt upon his personal beauty and the singular fascination of his manner. Symmetrical features, blue eyes of great vivacity, and a profusion of bright curling hair, were combined with a person not much above middle height, but perfectly well proportioned. Owing to a natural peculiarity of his head, the hair fell backward from the temples, and he had acquired the habit of pushing it from his brows. The custom became a fashion among the host of courtiers, who were but too happy to glass themselves in so brilliant a mirror. As Charles the Fifth, on his journey to Italy, to assume the iron crown, had caused his hair to be clipped close, as a remedy for the headaches with which, at that momentous epoch, he was tormented, bringing thereby close-shaven polls into extreme fashion; so a mass of hair pushed backward from the temples, in the style to which the name of John of Austria was appropriated, became the prevailing mode wherever the favourite son of the Emperor appeared.

Lepanto] in the Gulf of Corinth. Here in 1571 Don John of Austria, commanding a combined Austrian, Italian and Spanish fleet, completely crushed the naval power of the Turks.

the iron crown] of Lombardy.

Such was the last crusader whom the annals of chivalry were to know ; the man who had humbled the Crescent as it had not been humbled since the days of the Tancreds, the Baldwins, the Plantagenets—yet, after all, what was this brilliant adventurer when weighed against the tranquil Christian champion whom he was to meet face to face ? The contrast was striking between the real and the romantic hero. Don John had pursued and achieved glory through victories with which the world was ringing ; William was slowly compassing a country's emancipation through a series of defeats. He moulded a commonwealth and united hearts with as much contempt for danger as Don John had exhibited in scenes of slave-driving and carnage. Amid fields of blood, and through webs of tortuous intrigue, the brave and subtle son of the Emperor pursued only his own objects. Tawdry schemes of personal ambition, conquests for his own benefit, impossible crowns for his own wearing, were the motives which impelled him, and the prizes which he sought. His existence was feverish, fitful, and passionate. 'Tranquil amid the raging billows,' according to his favourite device, the father of his country waved aside the diadem which for him had neither charms nor meaning. Their characters were as contrasted as their persons. The curled darling of chivalry seemed a youth at thirty-one. Spare of figure, plain of apparel, benignant, but haggard of countenance, with temples bared by anxiety as much as by his helmet, earnest, almost devout in manner, in his own words, 'Calvus et Calvinista,' William of Orange was an old man at forty-three.

J. L. MOTLEY, *The Rise of the Dutch Republic*.

champion] William the Silent.

Calvus, etc.] 'Bald and Calvinist.' The pun defies translation.

## SPAIN IN THE SEVENTEENTH CENTURY

BUT how art thou fallen from heaven, O Lucifer, son of the morning ! How art thou cut down to the ground, that didst weaken the nations ! If we overleap a hundred years, and look at Spain towards the close of the seventeenth century, what a change do we find ! The contrast is as great as that which the Rome of Gallienus and Honorius presents to the Rome of Marius and Cæsar. Foreign conquest had begun to eat into every part of that gigantic monarchy on which the sun never set. Holland was gone, and Portugal, and Artois, and Roussillon, and Franche Comté. In the East, the empire founded by the Dutch far surpassed in wealth and splendour that which their old tyrants still retained. In the West, England had seized, and still held, settlements in the midst of the Mexican sea.

The mere loss of territory was, however, of little moment. The reluctant obedience of distant provinces generally costs more than it is worth. Empires which branch out widely are often more flourishing for a little timely pruning. Adrian acted judiciously when he abandoned the conquests of Trajan ; and England was never so rich, so great, so formidable to foreign princes, so absolutely mistress of the sea, as since the loss of her American colonies. The Spanish empire was still, in outward appearance, great and magnificent. The European dominions subject to the last feeble Prince of the House of Austria were far more extensive than those of Lewis the Fourteenth. The American dependencies

But how . . . nations] Isaiah xiv. 12.

Gallienus and Honorius] late Roman Emperors.

Adrian] or Hadrian, succeeded Trajan as Roman Emperor,  
117 A.D.

of the Castilian crown still extended far to the North of Cancer and far to the South of Capricorn. But within this immense body there was an incurable decay, an utter want of tone, an utter prostration of strength. An ingenious and diligent population, eminently skilled



#### THE CAPITULATION OF BREDA

From a picture by Velasquez in the Museo de Madrid

in arts and manufactures, had been driven into exile by stupid and remorseless bigots. The glory of the Spanish pencil had departed with Velasquez and Murillo. The splendid age of Spanish literature had closed with Solis and Calderon. During the seventeenth century many states had formed great military

An ingenious . . . population] the Moors, finally expelled from Spain in 1609-10.

establishments. But the Spanish army, so formidable under the command of Alva and Farnese, had dwindled away to a few thousand men, ill paid and ill disciplined. England, Holland, and France had great navies. But the Spanish navy was scarcely equal to the tenth part of that mighty force which, in the time of Philip the Second, had been the terror of the Atlantic and the Mediterranean. The arsenals were deserted. The magazines were unprovided. The frontier fortresses were ungarrisoned. The police was utterly inefficient for the protection of the people. Murders were committed in the face of day with perfect impunity. Bravoos and discarded serving-men, with swords at their sides, swaggered every day through the most public streets and squares of the capital, disturbing the public peace, and setting at defiance the ministers of justice. The finances were in frightful disorder. The people paid much. The government received little. The American viceroys and the farmers of the revenue became rich, while the merchants broke, while the peasantry starved, while the body-servants of the sovereign remained unpaid, while the soldiers of the royal guard repaired daily to the doors of convents, and battled there with the crowd of beggars for a porringer of broth and a morsel of bread. Every remedy which was tried aggravated the disease. The currency was altered; and this frantic measure produced its never-failing effects. It destroyed all credit, and increased the misery which it was intended to relieve. The American gold, to use the words of Ortiz, was to the necessities of the state but as a drop of water to the lips of a man raging with thirst. Heaps of unopened despatches accumulated in the offices, while the



Ministers were concerting with bedchamber-women and Jesuits the means of tripping up each other. Every foreign power could plunder and insult with impunity the heir of Charles the Fifth. Into such a state had the mighty kingdom of Spain fallen, while one of its smallest dependencies, a country not so large as the province of Estremadura or Andalusia, situated under an inclement sky, and preserved only by artificial means from the inroads of the ocean, had become a power of the first class, and treated on terms of equality with the courts of London and Versailles.

LORD MACAULAY, *Essays*.

## LE ROI SOLEIL

LET them disguise the place, however, as they will, and plaster the walls with bad pictures as they please, it will be hard to think of any family but one, as one traverses this vast gloomy edifice. It has not been humbled to the ground, as a certain palace of Babel was of yore ; but it is a monument of fallen pride, not less awful, and would afford matter for a whole library of sermons. The cheap defence of nations expended a thousand millions in the erection of this magnificent dwelling-place. Armies were employed, in the intervals of their warlike labours, to level hills, or pile them up ; to turn rivers, and to build aqueducts, and transplant

one . . . dependencies] Holland.

LE ROI SOLEIL] 'The Sun-King'—so Louis XIV was hailed by his courtiers.

the place] Versailles.

The cheap defence of nations] loyalty. The phrase is Burke's: see the next extract.

woods, and construct smooth terraces, and long canals. A vast garden grew up in a wilderness, and a stupendous palace in the garden, and a stately city round the palace : the city was peopled with parasites, who daily came to do worship before the creator of these wonders—the Great King. ‘ Dieu seul est grand,’ said courtly Massillon ; but next to him, as the prelate thought, was certainly Louis, his vicegerent here upon earth—God’s lieutenant-governor of the world,—before whom courtiers used to fall on their knees, and shade their eyes, as if the light of his countenance, like the sun, which shone supreme in heaven, the type of him, was too dazzling to bear.

Did ever the sun shine upon such a king before, in such a palace ?—or, rather, did such a king ever shine upon the sun ? When Majesty came out of his chamber, in the midst of his superhuman splendours ; viz., in his cinnamon-coloured coat, embroidered with diamonds ; his pyramid of a wig<sup>1</sup> ; his red-heeled shoes, that lifted him four inches from the ground, ‘ that he scarcely seemed to touch ’ ; when he came out, blazing upon the dukes and duchesses that waited his rising,—what could the latter do, but cover their eyes, and wink, and tremble ?—And did he not himself believe, as he stood there, on his high heels, under his ambrosial periwig, that there was something in him more than man—something above Fate ?

I have often liked to think about this strange character in the world, who moved in it, bearing about a full belief in his own infallibility ; teaching his generals the art of war, his ministers the science of government, his wits taste, his courtiers dress ; ordering deserts to

<sup>1</sup> It is fine to think that, in the days of his youth, His Majesty, Louis XIV, used to *powder his wig with gold-dust*. [W. M. T.]



‘ A VAST GARDEN GREW UP IN A WILDERNESS ’

From a contemporary print of the Gardens at Versailles

become gardens, turning villages into palaces, at a breath ; and, indeed, the august figure of the man, as he towers upon his throne, cannot fail to inspire one with respect and awe :—how grand those flowing locks appear ; how awful that sceptre ; how magnificent those flowing robes ! In Louis, surely, if in any one, the majesty of kinghood is represented.

But a king is not every inch a king, for all the poet may say ; and it is curious to see how much precise majesty there is in that majestic figure of Ludovicus Rex. In the plate opposite, we have endeavoured to make the exact calculation. The idea of kingly dignity is equally strong in the two outer figures ; and you see, at once, that majesty is made out of the wig, the high-heeled shoes, and cloak, all fleurs-de-lis bespangled. As for the little, lean, shrivelled, paunchy old man, of five feet two, in a jacket and breeches, there is no majesty in *him*, at any rate ; and yet he has just stepped out of that very suit of clothes. Put the wig and shoes on him, and he is six feet high ;—the other fripperies, and he stands before you majestic, imperial, and heroic ! Thus do barbers and cobblers make the gods that we worship : for do we not all worship him ? Yes ; though we all know him to be stupid, heartless, short, of doubtful personal courage, worship and admire him we must ; and have set up, in our hearts, a grand image of him, endowed with wit, magnanimity, valour, and enormous heroical stature.

And what magnanimous acts are attributed to him ? or, rather, how differently do we view the actions of heroes and common men, and find that the same thing shall be a wonderful virtue in the former, which, in the latter, is only an ordinary act of duty.



Rex

Ludovicus

Ludovicus Rex

AN HISTORICAL STUDY

Out of the window the king's august head was one day thrust, when old Condé was painfully toiling up the steps of the court below. 'Don't hurry yourself, my cousin,' cries Magnanimity; 'one who has to carry so many laurels cannot walk fast.' At which all the courtiers, lackeys, mistresses, chamberlains, Jesuits, and scullions, clasp their hands, and burst into tears. Men are affected by the tale to this very day. For a century and three-quarters, have not all the books that speak of Versailles, or Louis Quatorze, told the story?—'Don't hurry yourself, my cousin!' O admirable king and Christian! what a pitch of condescension is here, that the greatest king of all the world should go for to say anything so kind, and really tell a tottering old gentleman, worn out with gout, age, and wounds, not to walk too fast!

What a proper fund of slavishness is there in the composition of mankind, that histories like these should be found to interest and awe them. Till the world's end, most likely, this story will have its place in the history books, and unborn generations will read it, and tenderly be moved by it. I am sure that Magnanimity went to bed that night, pleased and happy, intimately convinced that he had done an action of sublime virtue, and had easy slumbers and sweet dreams.

Do not let us abuse poor old Louis, on account of this monstrous pride; but only lay it to the charge of the fools who believed and worshipped it. If, honest man, he believed himself to be almost a god, it was only because thousands of people had told him so—people, only half liars, too, who did, in the depths of their slavish respect, admire the man almost as much as they said they did. If, when he appeared in his five-hundred-



million coat, as he is said to have done, before the Siamese ambassadors, the courtiers began to shade their eyes, and long for parasols, as if this Bourbonic sun was too hot for them ; indeed, it is no wonder that he should believe that there was something dazzling about his person : he had half a million of eager testimonies to this idea. Who was to tell him the truth ?— Only in the last years of his life did trembling courtiers dare whisper to him, after much circumlocution, that a certain battle had been fought at a place called Blenheim, and that Eugene and Marlborough had stopped his long career of triumphs.

‘ *On n’est plus heureux à notre âge,*’ says the old man, to one of his old generals, welcoming Tallard, after his defeat ; and he rewards him with honours, as if he had come from a victory. There is, if you will, something magnanimous in this welcome to his conquered general, this stout protest against Fate. Disaster succeeds disaster ; armies after armies march out to meet fiery Eugene and that dogged fatal Englishman, and disappear in the smoke of the enemies’ cannon. Even at Versailles you may almost hear it roaring at last ; but when courtiers, who have forgotten their God, now talk of quitting this grand temple of his, old Louis plucks up heart, and will never hear of surrender. All the gold and silver at Versailles he melts, to find bread for his armies ; all the jewels on his five-hundred-million coat he pawns resolutely ; and, bidding Villars go and make the last struggle but one, promises, if his general is defeated, to place himself at the head of his nobles, and die King of France. Indeed, after a man, for sixty years, has been performing the part of a hero, some of the real heroic stuff must have entered into his

composition, whether he would or not. When the great Elliston was enacting the part of King George the Fourth, in the play of *The Coronation*, at Drury Lane, the galleries applauded very loudly his suavity and majestic demeanour, at which Elliston, inflamed by the popular loyalty (and by some fermented liqueur in which, it is said, he was in the habit of indulging), burst into tears, and, spreading out his arms, exclaimed : ‘ Bless ye, bless ye, my people ! ’ Don’t let us laugh at his Ellistonian majesty, nor at the people who clapped hands, and yelled ‘ bravo,’ in praise of him. The tipsy old manager did really feel that he was a hero at that moment ; and the people, wild with delight and attachment for a magnificent coat and breeches, surely were uttering the true sentiments of loyalty, which consists in reverencing these and other articles of costume. In this fifth act, then, of his long royal drama, old Louis performed his part excellently ; and, when the curtain drops upon him, he lies, dressed majestically, in a becoming kingly attitude, as a king should.

W. M. THACKERAY, *The Paris Sketch-Book*.

## MARIE ANTOINETTE

It is now sixteen or seventeen years since I saw the Queen of France, then the Dauphiness, at Versailles ; and surely never lighted on this orb, which she hardly seemed to touch, a more delightful vision. I saw her just above the horizon, decorating and cheering the elevated sphere she just began to move in—glittering like the morning star, full of life, and splendour, and joy. Oh ! what a revolution ! and what a heart must I have, to contemplate without emotion that elevation

and that fall ! Little did I dream when she added titles of veneration to those of enthusiastic, distant, respectful love, that she should ever be obliged to carry the sharp antidote against disgrace concealed in that bosom ; little did I dream that I should have lived to see such disasters fallen upon her in a nation of gallant men, in a nation of men of honour and of cavaliers. ~~I~~ I thought ten thousand swords must have leaped from their scabbards to avenge even a look that threatened her with insult. But the age of chivalry has gone. That of sophisters, economists, and calculators has succeeded ; and the glory of Europe is extinguished for ever.

Never, never more, shall we behold that generous loyalty to sex and rank, that proud submission, that dignified obedience, that subordination of the heart, which kept alive, even in servitude itself, the spirit of an exalted freedom. The unbought grace of life, the cheap defence of nations, the nurse of manly sentiment and heroic enterprise is gone !

It is gone, that sensibility of principle, that chastity of honour, which felt a stain like a wound ; which inspired courage while it mitigated ferocity ; which ennobled whatever it touched, and under which vice itself lost half its evil, by losing all its grossness.

EDMUND BURKE, *Reflections on the French Revolution.*

## THE DEATH OF MARIE ANTOINETTE

BEAUTIFUL Highborn that wert so foully hurled low !  
For, if thy being came to thee out of old Hapsburg  
Dynasties, came it not also out of Heaven ? *Sunt*

*lachrymae rerum et mentem mortalia tangunt.* Oh ! is there a man's heart that thinks without pity of those long months and years of slow-wasting ignominy ;—of thy birth soft-cradled, the winds of Heaven not to visit thy face too roughly, thy foot to light on softness, thy eye on splendour ; and then of thy death, or hundred deaths, to which the guillotine and Fouquier-Tinville's judgement was but the merciful end ?

Look there, O man born of woman ! The bloom of that fair face is wasted, the hair is grey with care ; the brightness of those eyes is quenched, their lids hang drooping, the face is stony pale as of one living in death.

Mean weeds which her own hand has mended attire the Queen of the World. The death-hurdle, where thou sittest pale, motionless, which only curses environ, has to stop—a people drunk with vengeance will drink it again in full draught, looking at thee there. Far as the eye reaches, a multitudinous sea of maniac heads, the air deaf with their triumph-yell !

The living-dead must shudder with yet one more pang ; her startled blood yet again suffuses with the hue of agony that pale face, which she hides with her hands.

There is, then, no heart to say, ' God pity thee ' ?

O think not of these : think of Him Whom thou worshipping, the Crucified—Who also treading the winepress alone, fronted sorrow still deeper, and triumphed over it, and made it holy, and built of it a Sanctuary of Sorrow for thee and all the wretched !

*Sunt lachrymae, etc.]* Virgil, *Aen.*, I. 462. Rhoades translates :

' And there are tears for what befalls, and hearts  
Touched by the chances of mortality.'

Thy path of thorns is nigh ended. One long last look at the Tuileries, where thy step was once so light—where thy children shall not dwell.

The head is on the block ; the axe rushes—dumb lies the world ; that wild-yelling world, and all its madness, is behind thee.

THOMAS CARLYLE, *The French Revolution*.

## ON THE EXTINCTION OF THE VENETIAN REPUBLIC

[In 1797, after 1100 years of independence, Venice submitted to Napoleon, who handed her over to Austria.]

ONCE did she hold the gorgeous east in fee ;  
And was the safeguard of the west ; the worth  
Of Venice did not fall below her birth,  
Venice, the eldest Child of Liberty.  
She was a maiden City, bright and free ;  
No guile seduced, no force could violate ;  
And, when she took unto herself a Mate,  
She must espouse the everlasting Sea.  
And what if she had seen those glories fade,  
Those titles vanish, and that strength decay ;  
Yet shall some tribute of regret be paid  
When her long life hath reached its final day :  
Men are we, and must grieve when even the Shade  
Of that which once was great is passed away.

WILLIAM WORDSWORTH.

espouse the Sea] Every year the Doge put forth in the state galley, the Bucentaur, and threw a ring into the Adriatic in token that Venice was Queen of the Sea.

## GARIBALDI

WHEN in 1848 he returned to fight for Italy, in the full strength of matured manhood—at the time of life when Cromwell first drew sword—he had been sheltered, ever since he went to sea at fifteen, from every influence which might have turned him into an ordinary man or an ordinary soldier.

He had had two schools—the seas of romance, and the plateaus of South America. He had lived on ship-board and in the saddle. The man who loved Italy as even she has seldom been loved, scarcely knew her. The soldier of modern enlightenment was himself but dimly enlightened. Rather, his mind was like a vast sea cave, filled with the murmur of dark waters at flow and the stirring of nature's greatest forces, lit here and there by streaks of glorious sunshine bursting in through crevices hewn at random in its rugged sides. He had all the distinctive qualities of the hero, in their highest possible degree, and in their very simplest form. Courage and endurance without limit; tenderness to man and to all living things, which was never blunted by a life-time of war in two hemispheres among combatants often but half civilized; the power to fill men with ardour by his presence and to stir them by his voice to great deeds; but above all the passion to be striking a blow for the oppressed, a passion which could not be quenched by failure, nor checked by reason, nor sated by success, old age, and the worship of the world.

These qualities, perhaps, could not have existed in a degree so pre-eminent, in the person either of a sage or of a saint. Without, on the one hand, the child-like



simplicity that often degenerated into folly, and on the other hand, the full store of common human passions that made him one with the multitude, he could never have been so ignorant of despair and doubt, so potent to overawe his followers and to carry men blindfold into enterprises which would have been madness under any other chief. The crowning work of his life was in 1860, when he landed with a thousand ill-armed volunteers in the Island of Sicily, to overcome a garrison of 24,000 well-armed and well-disciplined men. Moltke could no more have conquered Sicily with such means, than Garibaldi could have planned the battle of Sedan.

GEORGE MACAULAY TREVELYAN,

*Garibaldi's Defence of the Roman Republic.*

By kind permission of Messrs. Longmans, Green & Co.

## THE ENGLISH IN INDIA

A HUNDRED times have I said to myself that to every Englishman in this country as he ends his work might be truthfully applied the phrase: 'Thou hast loved righteousness and hated iniquity.' No man has, I believe, ever served India faithfully of whom that could not be said. All other triumphs are tinsel and sham. Perhaps there are few of us who make anything but a poor approximation to that ideal. But let it be our ideal all the same, to fight for the right, to abhor the imperfect, the unjust, or the mean, to swerve neither to the right hand nor to the left, to care nothing for flattery, or applause, or odium, or abuse—it is so easy to have any of them in India—never to let your enthusiasm be soured, or your courage grow dim, but to remember that the Almighty has placed your hand

on the greatest of His ploughs, in whose furrow the Nations of the future are germinating and taking shape, to drive the blade a little forward in your time, and to feel that somewhere among these millions you have left a little justice, or happiness, or prosperity, a sense of manliness or moral dignity, a spring of patriotism, the dawn of intellectual enlightenment, or a stirring of duty where it did not before exist. That is enough. That is the Englishman's justification in India. It is good enough for his watchword while he is here, for his epitaph when he is gone. I have worked for no other aim. Let India be my judge.

LORD CURZON.

By kind permission of The Most Hon. The Marchioness of Kedleston.

## THE GETTYSBURG ORATION

[Made over the soldiers who had fallen in the battle of Gettysburg during the American Civil War]

FOURSCORE-AND-SEVEN years ago our fathers brought forth upon this continent a new nation, conceived in liberty, and dedicated to the proposition that all men are created equal.

Now we are engaged in a civil war, testing whether that nation, or any nation so conceived and so dedicated, can long endure. We are met on a great battlefield of that war. We have come to dedicate a portion of that field as a final resting-place for those who here gave their lives that that nation might live. It is altogether fitting and proper that we should do this.

But in a larger sense we cannot dedicate, we cannot consecrate, we cannot hallow this ground. The brave men, living and dead, who struggled here, have conse-

crated it far above our power to add or detract. The world will little note nor long remember what we say here, but it can never forget what they did here. It is for us, the living, rather to be dedicated here to the unfinished work which they who fought here have thus far so nobly advanced. It is rather for us to be here dedicated to the great task remaining before us ; that from these honoured dead we take increased devotion to that cause for which they gave the last full measure of devotion ; that we here highly resolve that these dead shall not have died in vain ; that this nation, under God, shall have a new birth of freedom ; and that government of the people, by the people, and for the people, shall not perish from the earth.

ABRAHAM LINCOLN.

## THE TERLINCHTHUN ORATION

[Made by H.M. King George V. after visiting the graves of the British soldiers who fell in France during the Great War.]

FOR the past few days I have been on a solemn pilgrimage in honour of a people who died for all free men.

At the close of that pilgrimage, on which I followed ways already marked by many footsteps of love and pride and grief, I should like to send a message to all who have lost those dear to them in the Great War, and in this the Queen joins with me to-day, amidst these surroundings so wonderfully typical of that single-hearted assembly of nations and of races which form our Empire. For here, in their last quarters, lie sons of every portion of that Empire, across, as it were, the threshold of the Mother Island which they guarded,

that Freedom might be saved in the uttermost ends of the earth.

For this, a generation of our manhood offered itself without question, and almost without the need of summons. Those proofs of virtue, which we honour here to-day, are to be found throughout the world and its waters—since we can truly say that the whole circuit of the earth is girdled with the graves of our dead. Beyond the stately cemeteries of France, across Italy, through Eastern Europe in well-nigh unbroken chain they stretch, passing over the holy Mount of Olives itself to the furthest shores of the Indian and Pacific Oceans—from Zeebrugge to Coronel, from Dunkirk to the hidden wilderness of East Africa.

But in this fair land of France, which sustained the utmost fury of the long strife, our brothers are numbered, alas ! by hundreds of thousands.

They lie in the keeping of a tried and generous friend, a resolute and chivalrous comrade-in-arms, who with ready and quick sympathy has set aside for ever the soil in which they sleep, so that we ourselves and our descendants may for all time reverently tend and preserve their resting-places.

And there, at Terlinchthun, the shadow of his monument falling almost across their graves, the greatest of French soldiers—of all soldiers—stands guard over them. And this is just, for side by side with the descendants of his incomparable armies they defended his land in defending their own.

Never before in history have a people thus dedicated and maintained individual memories to their fallen, and in the course of my pilgrimage I have many times asked myself whether there can be more potent advocates of



**A BRITISH WAR CEMETERY**

**Notice the Cross of Sacrifice and the Stone of Remembrance**

*Photograph by Central News*

peace upon earth through the years to come than this massed multitude of silent witnesses to the desolation of war. And I feel that, so long as we have faith in God's purposes, we cannot but believe that the existence of these visible memorials will eventually serve to draw all peoples together in sanity and self-control, even as it has already set the relations between our Empire and our Allies on the deep-rooted bases of a common heroism and a common agony.

Standing beneath this Cross of Sacrifice, facing the great Stone of Remembrance, and compassed by these sternly simple headstones, we remember, and must charge our children to remember, that as our dead were equal in sacrifice, so are they equal in honour, for the greatest and the least of them have proved that sacrifice and honour are no vain things, but truths by which the world lives.

Many of the cemeteries I have visited in the remoter and still desolate districts of this sorely stricken land, where it has not yet been possible to replace the wooden crosses by headstones, have been made into beautiful gardens which are lovingly cared for by comrades of the war.

I rejoice I was fortunate enough to see these in the spring, when the returning pulse of the year tells of unbroken life that goes forward in the face of apparent loss and wreckage; and I fervently pray that, both as nations and individuals, we may so order our lives after the ideals for which our brethren died that we may be able to meet their gallant souls once more, humbly but unashamed.

H.M. KING GEORGE V.



### III

#### A VISIONARY REPUBLIC

HOWEVER desirable, for the purposes of defence, a numerous population might be, it was not possible to make at once the same numerous allotments among the untilled valleys, and upon the sides of the mountains, as had been made in the cultivated plains. The enfranchised shepherd or woodlander having chosen there his place of residence, builds it of sods, or of mountain-stone, and, with the permission of his lord, encloses, like Robinson Crusoe, a small croft or two immediately at his door for such animals as he wishes to protect. Others are happy to imitate his example, and avail themselves of the same privileges : and thus a population, mainly of Danish or Norse origin, as the dialect indicates, crept on towards the more secluded parts of the valleys. . . .

Every family spun from its own flock the wool with which it was clothed ; a weaver was here and there found among them ; and the rest of their wants was supplied by the produce of the yarn, which they carded and spun in their own houses, and carried to market, either under their arms, or more frequently on pack-horses, a small train taking their way weekly down the valley or over the mountains to the most commodious towns. They had, as I have said, their rural chapel, and of course their minister, in clothing and in manner  
valleys] *i.e.* the dales of the Lake District.

of life in no respect differing from themselves, except on the Sabbath-day; this was the sole distinguished individual among them; everything else, person or possession, exhibited a perfect equality, a community of shepherds and agriculturists, proprietors, for the most part, of the lands which they occupied and cultivated. . . .

Thus has been given a faithful description, the minuteness of which the reader will pardon, of the face of this country as it was, and had been through centuries, till within the last sixty years. Towards the head of these Dales was formed a perfect Republic of Shepherds and Agriculturists, among whom the plough of each was confined to the maintenance of his own family, or to the occasional accommodation of his neighbour. Two or three cows furnished each family with milk and cheese. The chapel was the only edifice that presided over these dwellings, the supreme head of this pure Commonwealth; the members of which existed in the midst of a powerful empire, like an ideal society or an organized community, whose constitution had been imposed and regulated by the mountains which protected it. Neither high-born nobleman, knight, nor esquire, was here; but many of these humble sons of the hills had a consciousness that the land, which they walked over and tilled, had for more than five hundred years been possessed by men of their name and blood; and venerable was the transition, when a curious traveller, descending from the heart of the mountains, had come to some ancient manorial residence in the more open parts of the Vales, which, through the rights attached to its proprietor, connected  
the last sixty years] This was written in 1810.

the almost visionary mountain republic he had been contemplating with the substantial frame of society as existing in the laws and constitution of a mighty empire.

WILLIAM WORDSWORTH, *Guide to the Lakes*.

## THE VILLAGE AFTER ENCLOSURE

ALL these classes and interests were scattered by enclosure, but it was not one generation alone that was struck down by the blow. For the commons were the patrimony of the poor. The commoner's child, however needy, was born with a spoon in his mouth. He came into a world in which he had a share and a place. The civilisation which was now submerged had spelt a sort of independence for the obscure lineage of the village. It had represented, too, the importance of the interest of the community in its soil, and in this aspect also the robbery of the present was less important than the robbery of the future. For one act of confiscation blotted out a principle of permanent value to the State.

The immediate consequences of this policy were only partially visible to the governing or the cultivated classes. The rulers of England took it for granted that the losses of individuals were the gains of the State, and that the distresses of the poor were the condition of permanent advance. Modern apologists have adopted the same view ; and the popular resistance to enclosure is often compared to the wild and passionate fury that broke against the spinning and weaving machines, the symbols and engines of the Industrial Revolution. History has drawn a curtain over those days of exile and suffering, when cottages were pulled down as if by an invader's hand, and families that had lived for

centuries in their dales or on their small farms and commons were driven before the torrent, losing

Estate and house . . . and all their sheep,  
A pretty flock, and which for aught I know  
Had clothed the Ewbanks for a thousand years.

Ancient possessions and ancient families disappeared. But the first consequence was not the worst consequence: so far from compensating for this misery, the ultimate result was still more disastrous. The governing class killed by this policy the spirit of a race. The petitions that are buried with their brief and unavailing pathos in the *Journals* of the House of Commons are the last voice of village independence, and the unnamed commoners who braved the dangers of resistance to send their doomed protests to the House of Commons that obeyed their lords, were the last of the English peasants. These were the men, it is not unreasonable to believe, whom Gray had in mind when he wrote:—

Some village Hampden that with dauntless breast  
The little tyrant of his fields withstood.

As we read the descriptions of the state of France before the Revolution, there is one fact that comforts the imagination and braces the heart. We read of the intolerable services of the peasant, of his forced labour, his confiscated harvests, his crushing burdens, his painful and humiliating tasks, including in some cases even the duty of protecting the sleep of the seigneur from the croaking of the neighbouring marshes. The mind of Arthur Young was filled with this impression of

Estate and house . . .] From Wordsworth's *The Brothers*, II. 301-3.

Arthur Young] Travelled in France shortly before the Revolution.

unsupportable servitude. But a more discerning eye might have perceived a truth that escaped the English traveller. It is contained in an entry that often greets us in the official reports on the state of the provinces : *ce seigneur litige avec ses vassaux*. Those few words flash like a gleam of the dawn across this sombre and melancholy page. The peasant may be overwhelmed by the dîme, the taille, the corvée, the hundred and one services that knit his tenure to the caprice of a lord : he may be wretched, brutal, ignorant, ill-clothed, ill-fed, and ill-housed : but he has not lost his status : he is not a casual figure in a drifting proletariat : he belongs to a community that can withstand the seigneur, dispute his claims at law, resume its rights, recover its possessions, and establish, one day, its independence.

In England the aristocracy destroyed the promise of such a development when it broke the back of the peasant community. The enclosures created a new organization of classes. The peasant with rights and a status, with a share in the fortunes and government of his village, standing in rags, but standing on his feet, makes way for the labourer with no corporate rights to defend, no corporate power to invoke, no property to cherish, no ambition to pursue, bent beneath the fear of his masters, and the weight of a future without hope. No class in the world has so beaten and crouching a history, and if the blazing ricks in 1830 once threatened his rulers with the anguish of his despair, in no chapter of that history could it have been written, ' This parish is at law with its squire.' For the parish was no longer the community that offered the labourer friendship and

*ce seigneur*, etc.] ' This lord is at law with his vassals.'

dîme, taille, corvée] tithe, personal tax, forced labour.

sheltered his freedom : it was merely the shadow of his poverty, his helplessness, and his shame. ‘Go to an alehouse kitchen of an old enclosed country, and there you will see the origin of poverty and poor-rates. For whom are they to be sober ? For whom are they to save ? For the parish ? If I am diligent, shall I have leave to build a cottage ? If I am sober, shall I have land for a cow ? If I am frugal, shall I have half an acre of potatoes ? You offer no motives ; you have nothing but a parish officer and a workhouse !—Bring me another pot—.’

J. L. and B. HAMMOND, *The Village Labourer*.

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## THE DESERTED VILLAGE

SWEET AUBURN ! loveliest village of the plain,  
 Where health and plenty cheer'd the labouring swain,  
 Where smiling spring its earliest visit paid,  
 And parting summer's lingering blooms delay'd :  
 Dear lovely bowers of innocence and ease,  
 Seats of my youth, when every sport could please,  
 How often have I loiter'd o'er thy green,  
 Where humble happiness endear'd each scene ;  
 How often have I paus'd on every charm,  
 The shelter'd cot, the cultivated farm,  
 The never-failing brook, the busy mill,  
 The decent church that topp'd the neighbouring hill,  
 The hawthorn bush, with seats beneath the shade,  
 For talking age and whisp'ring lovers made ;  
 How often have I bless'd the coming day,  
 When toil remitting lent its turn to play,  
 And all the village train, from labour free,  
 Led up their sports beneath the spreading tree ;  
 While many a pastime circled in the shade,  
 The young contending as the old survey'd ;



And many a gambol frolick'd o'er the ground,  
And sleights of art and feats of strength went round ;  
And still as each repeated pleasure tir'd,  
Succeeding sports the mirthful band inspir'd ;  
The dancing pair that simply sought renown,  
By holding out to tire each other down ;  
The swain mistrustless of his smutt'd face,  
While secret laughter titter'd round the place ;  
The bashful virgin's side-long looks of love,  
The matron's glance that would those looks reprove :  
These were thy charms, sweet village ; sports like  
these,

With sweet succession, taught e'en toil to please ;  
These round thy bowers their cheerful influence shed,  
These were thy charms—But all these charms are fled.

Sweet smiling village, loveliest of the lawn,  
Thy sports are fled, and all thy charms withdrawn ;  
Amidst thy bowers the tyrant's hand is seen,  
And desolation saddens all thy green :  
One only master grasps the whole domain,  
And half a tillage stints thy smiling plain :  
No more thy glassy brook reflects the day,  
But chok'd with sedges, works its weedy way.  
Along thy glades, a solitary guest,  
The hollow-sounding bittern guards its nest ;  
Amidst thy desert walks the lapwing flies,  
And tires their echoes with unvaried cries.  
Sunk are thy bowers in shapeless ruin all,  
And the long grass o'ertops the mould'ring wall :  
And trembling, shrinking from the spoiler's hand,  
Far, far away, thy children leave the land.

Ill fares the land, to hast'ning ills a prey,  
Where wealth accumulates, and men decay :  
Princes and lords may flourish, or may fade ;  
A breath can make them, as a breath has made ;  
But a bold peasantry, their country's pride,  
When once destroy'd, can never be supplied.

A time there was, ere England's griefs began,  
When every rood of ground maintain'd its man ;  
For him light labour spread her wholesome store,

Just gave what life requir'd, but gave no more :  
His best companions, innocence and health ;  
And his best riches, ignorance of wealth.

But times are alter'd ; trade's unfeeling train  
Usurp the land and dispossess the swain ;  
Along the lawn, where scatter'd hamlets rose,  
Unwieldy wealth, and cumbrous pomp repose ;  
And every want to opulence allied,  
And every pang that folly pays to pride.  
Those gentle hours that plenty bade to bloom,  
Those calm desires that ask'd but little room,  
Those healthful sports that grac'd the peaceful scene,  
Liv'd in each look, and brighten'd all the green ;  
These, far departing, seek a kinder shore,  
And rural mirth and manners are no more.

OLIVER GOLDSMITH.

## THE INDUSTRIAL REVOLUTION

It is idle to dispute the advantages of inventions which have incalculably increased both production and employment, and have at the same time replaced by machinery the most burdensome forms of human toil. Millions of men and women are now living in England who could not possibly have subsisted there but for the great inventions that have been described ; and in spite of many fluctuations, the wages of this vastly increased population have usually been higher, not merely absolutely but also in their purchasing power, than those which were earned before these inventions had arisen. The multiplication and the diversity of possible employments have been of incalculable advantage to the poor, and manufactures more than any other single influence have enabled poor men of energy and skill to rise above the positions in which they were

born. Examples of such a rise were, of course, most numerous in the earlier days of the great manufactures ; but in the skilled artisans the manufacturing system still produces a large class whose general well-being is probably unequalled by any corresponding class on the Continent, and who in intelligence and energy form one of the most valuable elements of English life. Tracts of England which had formerly been almost waste and barbarous have been made prosperous and wealthy. Agriculture has started into a new perfection, in response to the vast demand for agricultural products which the great manufacturing centres have made. The high rate of wages in manufacturing towns has reacted upon the condition of the agricultural labourers, and raised the standard of wages in the surrounding country. Capital, skill, and energy acquired in manufacturing enterprise have ultimately passed largely into country life ; and the genius of Watt and Stephenson has brought distant markets almost to the doors of the farmer. Cheap clothing of calico and cotton, cheap tools, cheap means of transporting himself and the products which he wishes either to buy or to sell, cheap methods of communicating with his absent friends, and a cheap press to instruct and to amuse, are among the many blessings which machinery has bestowed upon the agricultural poor, while great centres of intelligence and energy have multiplied over the land and diffused their intellectual and moral influence through the remotest districts.

Human progress, however, rarely means more than a surplus of advantages over evils, and the evils that accompanied the sudden growth of manufactures were very great. We have already seen its powerful effects

in the destruction of small farms. Partly by ruining the domestic manufactures and compelling the enclosure of the commons, which alone enabled in many districts the poor farmer to subsist; partly by the temptation of higher wages, which has been steadily drawing the poorer population of the country to the great towns—manufactures have contributed most powerfully to give English country life its present type. In spite of the extraordinary rapidity with which the inventions in manufactures succeeded one another, it was some years before the factory system obtained a complete ascendancy, and each stage of its triumphant march was marked by the ruin of industrious men. Not only the manufactures pursued in the farmhouse, but also those on a somewhat larger scale pursued in the towns, were destroyed. The woollen manufacture in the eighteenth century was carried on by great numbers of small masters in their own homes. They usually employed about ten journeymen and apprentices, who were bound to them by long contracts, who boarded in the master's house, and who worked together with him and under his immediate superintendence. In Leeds and its neighbourhood in 1806 there were no less than 3500 of these establishments. But the gigantic factory, with its vast capital, its costly machinery, and its extreme subdivision of labour, soon swept them away. Handloom weaving—once a flourishing trade—long maintained a desperate competition against the factories, and as late as 1830 a very competent observer described the multitude of weavers, who were living in the great cities, in houses utterly unfit for human habitation, working fourteen hours a day and upwards, and earning only from five to eight shillings a week.



## THE REVOLUTION IN SPINNING

The sanitary neglect, the demoralisation, the sordid poverty, the acute and agonising want prevailing among great sections of the population of our manufacturing towns during the fifty or sixty years that followed the inventions of Arkwright and Crompton, can hardly be exaggerated. Human nature has seldom shown itself in a more unlovely form than in these crowded and pestilential alleys, in that dark and sulphurous atmosphere. The transition from one form of industry to another, the violent fluctuations of wages and of work, the sudden disruption of old ties and habits and associations, the transfer of thousands of female spinners from their country homes to the crowded factory, the vast masses of ignorance and pauperism that were attracted to the towns by vague prospects of employment, have all led to a misery and demoralisation of an extreme character. The transitions of industry are always painful, but very few transitions have been so much so as that in the closing years of the eighteenth century.

W. E. H. LECKY,

*History of England in the Eighteenth Century.*

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## THE MOULD-RUNNER

THE next morning, at half-past five, Darius began his career in earnest. He was 'mould-runner' to a 'muffin-maker,' a muffin being not a comestible but a small plate, fashioned by its maker on a mould. The business of Darius was to run as hard as he could with the mould, and a newly created plate adhering thereto, into the drying-stove. This 'stove' was a room lined



with shelves, and having a red-hot stove and stove-pipe in the middle. As no man of seven could reach the upper shelves, a pair of steps was provided for Darius, and up these he had to scamper. Each mould with its plate had to be leaned carefully against the wall, and if the soft clay of a new-born plate was damaged, Darius was knocked down. The atmosphere outside the stove was chill, but owing to the heat of the stove, Darius was obliged to work half-naked. His sweat ran down his cheeks, and down his chest, and down his back, making white channels, and lastly it soaked into his hair.

When there were no moulds to be sprinted into the drying-stove, and no moulds to be carried less rapidly out, Darius was engaged in clay-wedging. That is to say, he took a piece of raw clay weighing more than himself, cut it in two with a wire, raised one half above his head and crashed it down with all his force upon the other half, and he repeated the process until the clay was thoroughly soft and even in texture. At a later period it was discovered that hydraulic machinery could perform this operation more easily and more effectually than the brawny arms of a man of seven. At eight o'clock in the evening Darius was told that he had done enough for that day, and that he must arrive at five sharp the next morning to light the fire, before his master the muffin-maker began to work. When he inquired how he was to light the fire his master kicked him jovially on the thigh and suggested that he should ask another mould-runner. His master was not a bad man at heart, it was said, but on Tuesdays, after Sunday and Saint Monday, masters were apt to be capricious.

Darius reached home at a quarter to nine, having eaten but bread all day. Somehow he had lapsed into

the child again. His mother took him on her knee, and wrapped her sacking apron round his ragged clothes, and cried over him and cried into his supper of porridge, and undressed him and put him to bed. But he could not sleep easily because he was afraid of being late the next morning.

ARNOLD BENNETT, *Clayhanger*.

By kind permission of the author and Messrs. Methuen & Co.

### THE BLACK COUNTRY IN 1824

A SPACE perhaps of thirty square miles to the north covered over with furnaces, rolling-mills, steam-engines and sooty men. A dense cloud of pestilential smoke hangs over it, blackening even the grain that grows upon it; and at night the whole region burns like a volcano spitting fire from a thousand tubes of brick. But oh! the wretched hundred and fifty thousand mortals that grind out their destiny there! In the coal-mines they were literally naked, many of them, all but trousers; black as ravens; plashing about. In the iron-mills it was little better: blast-furnaces were roaring like the voice of many whirlwinds all around; the fiery metal was hissing through its moulds, or sparkling and spitting under hammers of a monstrous size, which fell like as many little earthquakes. Here they were wheeling charred coals, breaking their iron-stone, and tumbling all into their fiery pit; there they were turning and boring cannon with a hideous shrieking noise such as the earth could hardly parallel; and through the whole, half-naked demons pouring with sweat and besmeared with soot were hurrying to and fro in their red night-caps and sheet-iron breeches,

rolling or hammering or squeezing their glowing metal as if it had been wax or dough. Yet on the whole I am told that they are very happy ; they make forty shillings or more per week, and few of them will work on Mondays.

In the town you hear the clank of innumerable steam-engines, the rumbling of cars and vans, and the hum of men interrupted by the sharper rattle of some canal-boat loading or disloading ; or perhaps, some fierce explosion where the cannon-founders are proving their new-made ware. I have seen their polishing of teapots, and buttons, and gun-barrels, and fire-shovels, and swords, and all manner of toys and tackle, their tubs and vats, as large as county churches, full of copper and aqua-fortis and oil of vitriol.

THOMAS CARLYLE, *Letters*.

## PENUMBRA

HEARKEN to the hammers, endlessly hammering,  
The din of wheels, the drone of wheels, the furnaces  
Panting, where Man as in a demon-palace toils  
To forge the giant creatures of his brain.  
He has banished the spring and the innocence of leaves  
From the blackened waste he has made ; the infected sky  
Glooms with a sun aghast, and the murk of the night  
Is peopled with tall flames like spirits insane.

He strips himself to the heat, not of the jovial sun,  
But of the scorch of furnaces ; with naked breast  
Sweating beneath the iron and blear glass, amid  
The hammers' hammering and the wheels' roar.  
Not with grapes of October trodden underfoot  
Spurting juices of ripeness in runnels, his vats  
Brim, but with gushes flickered-over and blinding,  
Unshapen spilth and blaze of molten ore.

With a finger he lifts the weight of mountain sides  
Poised ; the metal mass he shears red-hot in a trice ;  
He gives to the animate iron thews of force,  
A Titan's pulse, and breath of fiery draught.  
Monsters mightier far than himself he creates  
To swim storming seas, and to mount in miles of air,  
To deride Space and the old opposition of Time :  
Their speed is like strong drink that he has quaffed.

He has the tamed lightning to do his bidding, draws  
Energies out of the veins of earth ; he is armed  
From all elements, woven as in a magic web ;  
He has stolen seeds of Death, wherewith to fight.  
He holds fabled terrors of the ancient gods in his hand  
In a handful of dust, earthquake and pestilence ;  
He exults to destroy, to obliterate, to be  
Lord of the powers of the engulfing night.

Deafened with the hammers, inebriate with the sound  
Of the powers he has raised out of their jealous lair,  
He has fever within him, he becomes dizzy,  
And craves, and knows not whither he is bound.  
Shall he attain god-like felicity of ease,  
Supreme articulate voice of nature's striving,  
Or builds he a vast prison for himself, a slave  
With iron of his own strong forging crowned ?

Insatiable of ransacked worlds, and exulting  
Furiously in feet-supplanting speed, the proud-eyed  
Victor, he who has come so far, so far, looks forth  
To achieve the eluded glory of his goal.  
What solitude is this that suddenly he enters ?  
Voices of earth no more with anchoring kindness call.  
The fevered hammers throb ; but deep within he knows  
The desert he has made in his own soul.

O where is now the dew-dropt radiance of morning,  
That sistered with him rock and reed and rippling stream,  
When simple of heart in the sun with a free body  
He accepted all the boundaries of his mind ?

Full of fears he was then, shadowed with helpless need  
To propitiate Powers that threatened each footstep.  
Has he escaped from these old terrors, to be the prey  
Of fears more terrible because less blind ?

LAURENCE BINYON, *The Sirens*.

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## THE MIDLAND COUNTRY IN 1835

O YOUNGSTERS ! the elderly man has his enviable memories, and not the least of them is the memory of a long journey in mid-spring or autumn on the outside of a stage-coach. The happy outside passenger seated on the box from the dawn to the gloaming gathered enough stories of English life, enough of English labours in town and country, enough aspects of earth and sky, to make episodes for a modern Odyssey. Suppose only that his journey took him through that central plain, watered at one extremity by the Avon, at the other by the Trent. As the morning silvered the meadows with their long lines of bushy willows marking the water-courses, or burnished the golden corn-ricks clustered near the long roofs of some midland homestead, he saw the full-uddered cows driven from their pasture to the early milking. Perhaps it was the shepherd, head-servant of the farm, who drove them, his sheep-dog following with a heedless unofficial air as of a beadle in undress. The shepherd with a slow and slouching walk, timed by the walk of grazing beasts, moved aside, as if unwillingly, throwing out a monosyllabic hint to his cattle ; his glance, accustomed to rest on things very near the earth, seemed to lift itself with difficulty to the coachman. Mail or stage-coach for him belonged to

that mysterious distant system of things called 'Goverment,' which, whatever it might be, was no business of his, any more than the most outlying nebula or the coal-sacks of the southern hemisphere : his solar system was the parish ; the master's temper and the casualties of lambing-time were his region of storms. He cut his bread and bacon with his pocket-knife, and felt no bitterness except in the matter of pauper labourers and the bad-luck that sent contrarious seasons and the sheep-rot. He and his cows were soon left behind, and the homestead too, with its pond overhung by elder-trees, its untidy kitchen-garden and cone-shaped yew-tree arbour. But everywhere the bushy hedgerows wasted the land with their straggling beauty, shrouded the grassy borders of the pastures with cat-kined hazels, and tossed their long blackberry branches on the corn-fields. Perhaps they were white with May, or starred with pale pink dogroses ; perhaps the urchins were already nutting amongst them, or gathering the plenteous crabs. It was worth the journey only to see those hedgerows, the liberal homes of unmarketable beauty—of the purple-blossomed ruby-berried night-shade, of the wild convolvulus climbing and spreading in tendrilled strength till it made a great curtain of pale-green hearts and white trumpets, of the many-tubed honeysuckle which, in its most delicate fragrance, hid a charm more subtle and penetrating than beauty. Even if it were winter the hedgerows showed their coral, the scarlet haws, the deep-crimson hips with lingering brown leaves to make a resting-place for the jewels of the hoar-frost. Such hedgerows were often as tall as the labourers' cottages dotted along the lanes, or clustered into a small hamlet, their little dingy windows



telling, like thick-filmed eyes, of nothing but the darkness within. The passenger on the coach-box, bowled along above such a hamlet, saw chiefly the roofs of it : probably it turned its back on the road, and seemed to lie away from everything but its own patch of earth and sky, away from the parish church by long fields and green lanes, away from all intercourse except that of tramps. If its face could be seen it was most likely dirty ; but the dirt was Protestant dirt, and the big, bold, gin-breathing tramps were Protestant tramps. There was no sign of superstition near, no crucifix or image to indicate a misguided reverence : the inhabitants were probably so free from superstition that they were in much less awe of the parson than of the overseer. Yet they were saved from the excesses of Protestantism by not knowing how to read, and by the absence of hand-looms and mines to be the pioneers of Dissent : they were kept safely in the *via media* of indifference, and could have registered themselves in the census by a big black mark as members of the Church of England.

But there were trim cheerful villages too, with a neat or handsome parsonage and grey church set in the midst ; there was the pleasant tinkle of the blacksmith's anvil, the patient cart-horses waiting at his door ; the basket-maker peeling his willow wands in the sunshine ; the wheelwright putting the last touch to a blue cart with red wheels ; here and there a cottage with bright transparent windows showing pots full of blooming balsams or geraniums, and little gardens in front all double daisies or dark wallflowers ; at the well, clean and comely women carrying yoked buckets, and towards the free school small Britons dawdling on, and

*via media*] midd e way.

handling their marbles in the pockets of unpatched corduroys adorned with brass buttons. The land around was rich and marly, great corn-stacks stood in the rick-yards—for the rick-burners had not found their way hither; the homesteads were those of rich farmers who paid no rent, or had the rare advantage of a lease, and could afford to keep their corn till prices had risen. The coach would be sure to overtake some of them on their way to their outlying fields or to the market-town, sitting heavily on their well-groomed horses, or weighing down one side of an olive-green gig. They probably thought of the coach with some contempt, as an accommodation for people who had not their own gigs, or who, wanting to travel to London and such distant places, belonged to the trading and less solid part of the nation. The passenger on the box could see that this was the district of protuberant optimists, sure that old England was the best of all possible countries, and that if there were any facts which had not fallen under their own observation, they were facts not worth observing: the district of clean little market-towns without manufactures, of fat livings, an aristocratic clergy, and low poor-rates.

But as the day wore on the scene would change: the land would begin to be blackened with coal-pits, the rattle of handlooms to be heard in hamlets and villages. Here were powerful men walking queerly with knees bent outward from squatting in the mine, going home to throw themselves down in their blackened flannel and sleep through the daylight, then rise and spend much of their high wages at the ale-house with their fellows of the Benefit Club; here the pale eager faces of handloom weavers, men and women, haggard from

sitting up late at night to finish the week's work, hardly begun till the Wednesday. Everywhere the cottages and the small children were dirty, for the languid mothers gave their strength to the loom ; pious Dissenting women, perhaps, who took life patiently, and thought that salvation depended chiefly on predestination, and not at all on cleanliness. The gables of Dissenting chapels now made a visible sign of religion, and of a meeting-place to counterbalance the ale-house, even in the hamlets ; but if a couple of old termagants were seen tearing each other's caps, it was a safe conclusion that, if they had not received the sacraments of the Church, they had not at least given in to schismatic rites, and were free from the errors of Voluntaryism. The breath of the manufacturing town, which made a cloudy day and a red gloom by night on the horizon, diffused itself over all the surrounding country, filling the air with eager unrest.

Here was a population not convinced that old England was as good as possible ; here were multitudinous men and women aware that their religion was not exactly the religion of their rulers, who might therefore be better than they were, and who, if better, might alter many things which now made the world perhaps more painful than it need be, and certainly more sinful. Yet there were the grey steeples too, and the churchyards, with their grassy mounds and venerable headstones, sleeping in the sunlight ; there were broad fields and homesteads, and fine old woods covering a rising ground, or stretching far by the roadside, allowing only peeps at the park and mansion which they shut in from the working-day world.

In these midland districts the traveller passed rapidly

from one phase of English life to another : after looking down on a village dingy with coal-dust, noisy with the shaking of looms, he might skirt a parish all of fields, high hedges, and deep-rutted lanes ; after the coach had rattled over the pavement of a manufacturing town, the scene of riots and trades-union meetings, it would take him in another ten minutes into a rural region, where the neighbourhood of the town was only felt in the advantages of a near market for corn, cheese, and hay, and where men with a considerable banking account were accustomed to say that 'they never meddled with politics themselves.' The busy scenes of the shuttle and the wheel, of the roaring furnace, of the shaft and the pulley, seemed to make but crowded nests in the midst of the large-spaced, slow-moving life of homesteads and far-away cottages and oak-sheltered parks. Looking at the dwellings scattered amongst the woody flats and the ploughed uplands, under the low grey sky which overhung them with an unchanging stillness as if Time itself were pausing, it was easy for the traveller to conceive that town and country had no pulse in common, except where the handlooms made a far-reaching straggling fringe about the great centres of manufacture ; that till the agitation about the Catholics in '29, rural Englishmen had hardly known more of Catholics than of the fossil mammals ; and that their notion of Reform was a confused combination of rick-burners, trades-unions, Nottingham riots, and in general whatever required the calling-out of the yeomanry.

GEORGE ELIOT, *Felix Holt*.

## IV

### ABOUT DR. JOHNSON

#### (1) *Boswell's First Meeting with Johnson*

MR. THOMAS DAVIES the actor, who then kept a book-seller's shop in Russel-Street, Covent-Garden, told me that Johnson was very much his friend, and came frequently to his house, where he more than once invited me to meet him ; but by some unlucky accident or other he was prevented from coming to us.

At last, on Monday the 16th of May, when I was sitting in Mr. Davies's back parlour, after having drunk tea with him and Mrs. Davies, Johnson unexpectedly came into the shop ; and Mr. Davies having perceived him through the glass-door in the room in which we were sitting, advancing towards us,—he announced his awful approach to me, somewhat in the manner of an actor in the part of Horatio, when he addresses Hamlet on the appearance of his father's ghost, ' Look, my Lord, it comes.' I found that I had a very perfect idea of Johnson's figure, from the portrait of him painted by Sir Joshua Reynolds soon after he had published his Dictionary, in the attitude of sitting in his easy chair in deep meditation, which was the first picture his friend did for him, which Sir Joshua has very kindly presented to me, and from which an engraving has been made for this work. Mr. Davies mentioned my name, and respectfully introduced me to him. I was much

agitated ; and recollecting his prejudice against the Scotch, of which I had heard much, I said to Davies, ' Don't tell where I come from.'—' From Scotland,' cried Davies roguishly. ' Mr. Johnson (said I), I do indeed come from Scotland, but I cannot help it.' I am willing to flatter myself that I meant this as light pleasantry to soothe and conciliate him, and not as an humiliating abasement at the expense of my country. But however that might be, this speech was somewhat unlucky ; for with that quickness of wit for which he was so remarkable, he seized the expression ' come from Scotland,' which I used in the sense of being of that country ; and, as if I had said that I had come away from it, or left it, retorted, ' That, Sir, I find, is what a very great many of your countrymen cannot help.' This stroke stunned me a good deal ; and when we had sat down, I felt myself not a little embarrassed, and apprehensive of what might come next.

(2) *Johnson and Christopher Smart*

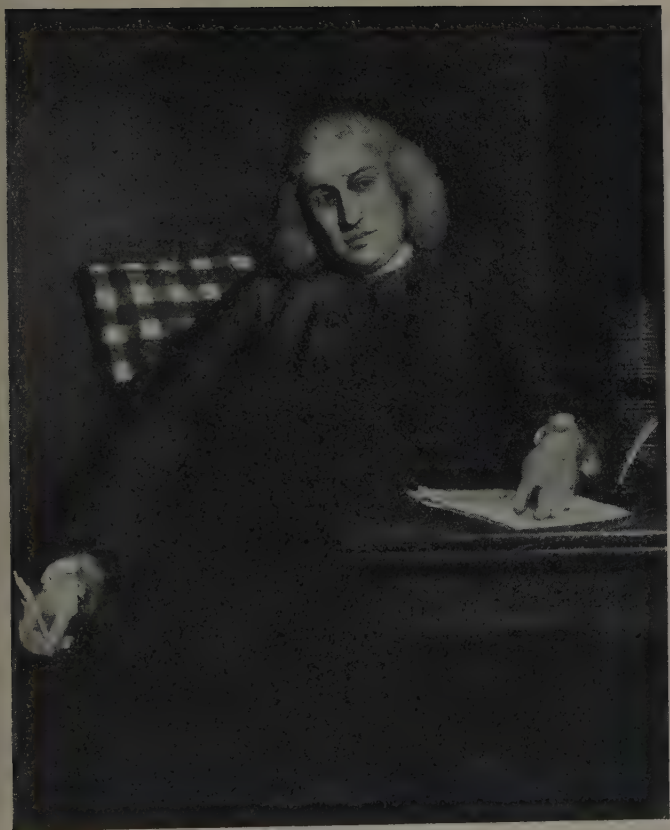
' My poor friend Smart shewed the disturbance of his mind, by falling upon his knees, and saying his prayers in the street, or in any other unusual place. Now although, rationally speaking, it is greater madness not to pray at all, than to pray as Smart did, I am afraid there are so many who do not pray, that their understanding is not called in question.'

Concerning this unfortunate poet, Christopher Smart, who was confined in a madhouse, he had, at another time, the following conversation with Dr. Burney :

BURNEY. How does poor Smart do, Sir ; is he likely to recover ?

Smart] Christopher Smart, author of the famous *Song to David*.





DR. JOHNSON

From the painting by Sir Joshua Reynolds in the  
National Portrait Gallery

JOHNSON. It seems as if his mind had ceased to struggle with the disease ; for he grows fat upon it.

BURNEY. Perhaps, Sir, that may be from want of exercise.

JOHNSON. No, Sir ; he has partly as much exercise as he used to have, for he digs in the garden. Indeed, before his confinement, he used for exercise to walk to the ale-house ; but he was *carried* back again. I did not think he ought to be shut up. His infirmities were not noxious to society. He insisted on people praying with him ; and I'd as lief pray with Kit Smart as any one else. Another charge was, that he did not love clean linen ; and I have no passion for it.

### (3) *Sundry Sayings*

*On Music.* I told him that it [music] affected me to such a degree, as often to agitate my nerves painfully, producing in my mind alternate sensations of pathetic dejection, so that I was ready to shed tears ; and of daring resolution, so that I was inclined to rush into the thickest part of the battle. 'Sir,' said he, 'I should never hear it, if it made me such a fool.'

*On Actors.* 'What, Sir, a fellow who claps a hump on his back, and a lump on his leg, and cries, "I am Richard the Third" ?'

*On Garrick.* JOHNSON : 'Here is a man who has advanced the dignity of his profession.' SCOTT : 'And he is a very sprightly writer too.' JOHNSON : 'Yes, Sir ; and all this supported by great wealth of his own acquisition. If all this had happened to me, I should have had a couple of fellows with long poles walking before me, to knock down everybody that stood in the way.'

*On Liberty.* ‘The notion of liberty amuses the people of England, and helps to keep off the *tædium vitæ*. When a butcher tells you that *his heart bleeds for his country*, he has, in fact, no uneasy feeling.’

*On Cant.* ‘My dear friend, clear your *mind* of cant. You may *talk* as other people do : you may say to a man, “Sir, I am your most humble servant.” You are *not* his most humble servant. You may say, “These are bad times ; it is a melancholy thing to be reserved to such times.” You don’t mind the times. You tell a man, “I am sorry you had such bad weather, and were so much wet.” You don’t care sixpence whether he is wet or dry. You may *talk* in this manner ; it is a mode of talking in society : but don’t *think* foolishly.’

*On Little Things.* ‘No, Sir ; it must be born with a man to be contented to take up with little things. Women have a great advantage that they may take up with little things without disgracing themselves ; a man cannot, except with fiddling. Had I learnt to fiddle, I should have done nothing else.’

*On Kindness.* ‘Getting money is not all a man’s business : to cultivate kindness is a valuable part of the business of life.’

*On Friendship.* ‘If a man does not make new acquaintance as he advances through life, he will soon find himself left alone. A man, Sir, should keep his friendship *in constant repair*.’

*On Soldiers.* ‘Every man thinks meanly of himself for not having been a soldier, or not having been at sea . . . Were Socrates and Charles the Twelfth of Sweden both present in any company, and Socrates to

*tædium vitæ*] boredom.

say, "Follow me, and hear a lecture in philosophy"; and Charles, laying his hand on his sword, to say, "Follow me, and dethrone the Czar"; a man would be ashamed to follow Socrates . . . The profession of soldiers and sailors has the dignity of danger. Mankind reverence those who have got over fear, which is so general a weakness.'

*On the Fear of Death.* To my question, whether we might not fortify our minds for the approach of death, he answered, in a passion, 'No, Sir, let it alone. It matters not how a man dies, but how he lives. The act of dying is not of importance, it lasts so short a time.' He added (with an earnest look), 'A man knows it must be so, and submits. It will do him no good to whine.'

JAMES BOSWELL, *Life of Samuel Johnson*.

## POOR RICHARD

It would be thought a hard government that should tax its people one tenth part of their time to be employed in its service; but idleness taxes many of us much more: sloth, by bringing on diseases, absolutely shortens life. 'Sloth, like rust, consumes faster than labour wears, while the used key is always bright,' as Poor Richard says. 'But dost thou love life, then do not squander time, for that is the stuff life is made of,' as Poor Richard says. How much more than is necessary do we spend in sleep; forgetting that 'The sleeping fox catches no poultry, and that there will be sleeping enough in the grave,' as Poor Richard says.

'If time be of all things the most precious, wasting time must be,' as Poor Richard says, 'the greatest prodigality'; since, as he elsewhere tells us, 'Lost time

is never found again ; and what we call time enough, always proves little enough.' Let us then up and be doing, and doing to the purpose, so by diligence shall we do more with less perplexity. ' Sloth makes all things difficult, but industry all easy, and he that riseth late, must trot all day, and shall scarce overtake his business at night, while laziness travels so slowly, that poverty soon overtakes him. Drive thy business, let not that drive thee ; and early to bed and early to rise, makes a man healthy, wealthy, and wise,' as Poor Richard says.

So what signifies wishing and hoping for better times ? We may make these times better if we bestir ourselves. ' Industry need not wish, and he that lives upon hope will die fasting. There are no gains without pains ; then help hands for I have no lands,' or if I have they are smartly taxed. ' He that hath a trade, hath an estate ; and he that hath a calling, hath an office of profit and honour,' as Poor Richard says ; but then the trade must be worked at, and the calling well followed, or neither the estate nor the office will enable us to pay our taxes. If we are industrious, we shall never starve ; for ' at the working man's house hunger looks in but dares not enter.' Nor will the bailiff or the constable enter, for ' industry pays debts, while despair increaseth them.' What though you have found no treasure, nor has any rich relation left a legacy, ' Diligence is the mother of good luck, and God gives all things to industry. Then plough deep, while sluggards sleep, and you shall have corn to sell and to keep.' Work while it is called to-day, for you know not how much you may be hindered to-morrow. ' One to-day is worth two to-morrows,' as Poor Richard says ; and

farther, 'Never leave that till to-morrow, which you can do to-day.' If you were a servant, would you not be ashamed that a good master should catch you idle? Are you then your own master? Be ashamed to catch yourself idle, when there is so much to be done for yourself, your family, your country, and your king. 'Handle your tools without mittens'; remember, that 'The cat in gloves catches no mice,' as Poor Richard says. It is true there is much to be done, and, perhaps, you are weak-handed; but stick to it steadily, and you will see great effects; for 'Constant dropping wears away stones; and by diligence and patience the mouse ate in two the cable; and little strokes fell great oaks.'

Methinks I hear some of you say, 'Must a man afford himself no leisure?' I will tell thee, my friend, what Poor Richard says: 'Employ thy time well, if thou meanest to gain leisure; and, since thou art not sure of a minute, throw not away an hour.' Leisure is time for doing something useful; this leisure the diligent man will obtain, but the lazy man never; for, 'A life of leisure and a life of laziness are two things. Many, without labour, would live by their wits only, but they break for want of stock'; whereas industry gives comfort, and plenty, and respect. 'Fly pleasures and they will follow you. The diligent spinner has a large shift: and now I have a sheep and a cow, every body bids me good morrow.'

This doctrine, my friends, is reason and wisdom; but, after all, do not depend too much upon your own industry, and frugality, and prudence, though excellent things; for they may all be blasted without the blessing of Heaven; and, therefore, ask that blessing humbly, and be not uncharitable to those that at



present seem to want it, but comfort and help them. Remember, Job suffered and was afterwards prosperous.

And now to conclude, 'Experience keeps a dear school, but fools will learn in no other,' as Poor Richard says, and scarce in that; for it is true, 'We may give advice, but we cannot give conduct.' However, remember this, 'They that will not be counselled, cannot be helped': and farther, that, 'If you will not hear reason, she will surely rap your knuckles,' as Poor Richard says.

BENJAMIN FRANKLIN, *Poor Richard's Almanack*.

## PRESENCE OF MIND

"Depend upon it a lucky guess is never merely luck—there is always some Talent in it."—MISS AUSTEN in *Emma*.

DR. CHALMERS used to say that in the dynamics of human affairs, two qualities were essential to greatness—Power and Promptitude. One man might have both, another power without promptitude, another promptitude without power. We must all feel the common sense of this, and can readily see how it applies to a general in the field, to a pilot in a storm, to a sportsman, to a fencer, to a debater. It is the same with an operating surgeon at all times, and may be at any time with the practitioner of the art of healing. He must be ready for what are called emergencies—cases which rise up at your feet, and must be dealt with on the instant,—he must have power and promptitude.

It is a curious condition of mind that this requires: it is like sleeping with your pistol under your pillow, and it on full cock; a moment lost and all may be lost. There is the very nick of time. This is what we mean by presence of mind; by a man having such a subject

at his finger ends ; that part of the mind lying nearest the outer world, and having to act on it through the bodily organs, through the will—the outposts must be always awake. It is of course, so to speak, only a portion of the mind that is thus needed and thus available ; if the whole mind were for ever at the advanced posts, it would soon lose itself in this endeavour to keep it. Now, though the thing needed to be done may be simple enough, what goes to the doing of it, and to the being at once ready and able to do it, involves much : the wedge would not be a wedge, or do a wedge's work, without the width behind as well as the edge in front. Your men of promptitude without genius or power, including knowledge and will, are those who present the wedge the wrong way. Thus your extremely prompt people are often doing the wrong thing, which is almost always worse than nothing. Our vague friend who bit ' Yarrow's ' tail instead of ' the Chicken's,' was full of promptitude ; as was also that other man, probably a relative, who barred the door with a boiled carrot : each knew what was needed—the biting the tail, the barring the door ; both erred as to the means—the one by want of presence of mind, the other by lack of mind itself. We must have just enough of the right knowledge and no more ; we must have the habit of using this ; we must have self-reliance, and the consentaneousness of the entire mind ; and what our hand finds to do, we must do with our might as well as with it. Therefore it is that this master act of the man, under some sudden and great unexpected crisis, is in a great measure performed unconsciously as to its mental means. The man is so *totus in illo*, that there is no bit *totus in illo*] wholly in that.

of the mind left to watch and record the acts of the rest ; therefore men, when they have done some signal feat of presence of mind, if asked how they did it, generally don't very well know—they just did it : it was, in fact, done and then thought of, not thought of and then done, in which case it would likely never have been done. Not that the act was uncaused by mind ; it is one of the highest powers of mind thus to act ; but it is done, if I may use the phrase, by an acquired instinct. You will find all this in that wonderful old Greek who was Alexander the Great's and the old world's school-master, and ours if we were wise,—whose truthfulness and clear insight one wonders at the longer he lives. He seems to have seen the human mind as a bird or an engineer does the earth—he knew the plan of it. We now-a-days see it as one sees a country, athwart and in perspective, and from the side ; he saw it from above and from below. There are therefore no shadows, no foreshortenings, no clear-obscure, indeed no disturbing medium ; it is as if he examined every thing *in vacuo*. I refer my readers to what he says on 'Ἀρχινοία and Εὐστοχία.

My object in what I have now written and am going to write, is to impress upon medical students the value of power and promptitude in combination, for their professional purposes ; the uses to them of nearness of the Νοῦς and of happy guessing ; and how you may see the sense, and neatness, and pith of that excellent thinker, as well as best of all story-tellers, Miss Austen,

that wonderful old Greek] Aristotle.

'Ἀρχινοία and Εὐστοχία] ' Presence of Mind ' and ' Happy Guessing ' ; see *Ethics*, vi. 9.

Νοῦς] mind.

when she says in *Emma*, 'Depend upon it, a lucky guess is never merely luck, there is always some talent in it.' Talent here denoting intelligence and will in action. In all sciences except those called exact, this happy guessing plays a large part, and in none more than in medicine, which is truly a tentative art, founded upon likelihood, and is therefore what we call contingent. Instead of this view of the healing art discouraging us from making our ultimate principles as precise, as we should make our observations, it should urge us the more to this; for, depend upon it, that guess as we may often have to do, he will guess best, most happily for himself and his patient, who has the greatest amount of true knowledge, and the most serviceable amount of what we may call mental cash, ready money, and ready weapons.

We must not only have wisdom, which is knowledge assimilated and made our own, but we must, as the Lancashire men say and do, *have wit to use it*. We may carry a nugget of gold in our pocket, or a £100 bank-note, but unless we can get it *changed*, it is of little use, and we must moreover have the coin of the country we are in. This want of presence of mind, and having your wits about you, is as fatal to a surgeon as to a general.

That wise little man, Dr. Henry Marshall, little in body but not little in mind, in brain, and in worth, used to give an instance of this. A young, well-educated surgeon, attached to a regiment quartered at Musselburgh, went out professionally with two officers who were in search of 'satisfaction.' One fell shot in the thigh, and in half-an-hour after he was found dead, the surgeon kneeling pale and grim over him, with his two thumbs sunk in his thigh *below* the wound, the grass steeped in blood. If he had put them two inches

higher, or extemporized a tourniquet with his sash and the pistol's ramrod and a stone, he might have saved his friend's life and his own—for he shot himself that night.

Here is another. Robbie Watson, whom I now see walking mildly about the streets—having taken to coal—was driver of the Dumfries coach by Biggar. One day he had changed horses, and was starting down a steep hill, with an acute turn at the foot, when he found his wheelers, two new horses, utterly ignorant of backing. They got furious, and we outside got alarmed. Robbie made an attempt to pull up, and then with an odd smile took his whip, gathered up his reins, and lashed the entire four into a gallop. If we had not seen his face we would have thought him a maniac; he kept them well together, and shot down like an arrow, as far as we could see to certain destruction. Right in front at the turn was a stout gate into a field, shut; he drove them straight at that, and through we went, the gate broken into shivers, and we finding ourselves safe, and the very horses enjoying the joke. I remember we emptied our pockets into Robbie's hat, which he had taken off to wipe his head. Now, in a few seconds all this must have passed through his head—'that horse is not a wheeler, nor that one either; we'll come to mischief; there's the gate; yes, I'll do it.' And he did it; but then he had to do it with his might; he had to make it impossible for his four horses to do anything but toss the gate before them.

Here is another case. Dr. Reid of Peebles, long famous in the end of last and beginning of this century, as the Doctor of Tweeddale; a man of great force of character, and a true Philip, a lover of horses, saw one

Philip] In Greek the name means 'lover of horses.'

Fair day a black horse, entire, thoroughbred. The groom asked a low price, and would answer no questions. At the close of the fair the doctor bought him, amid the derision of his friends. Next morning he rode him up Tweed, came home after a long round, and had never been better carried. This went on for some weeks; the fine creature was without a fault. One Sunday morning, he was posting up by Neidpath at a great pace, the country people trooping into the town to church. Opposite the fine old castle, the thoroughbred stood stock still, and it needed all the doctor's horsemanship to counteract the law of projectiles; he did, and sat still, and not only gave no sign of urging the horse, but rather intimated that it was his particular desire that he should stop. He sat there a full hour, his friends making an excellent joke of it, and he declining, of course, all interference. At the end of the hour, the Black Duke, as he was called, turned one ear forward, then another, looked aside, shook himself, and moved on, his master intimating that this was exactly what he wished; and from that day till his death, some fifteen years after, never did these two friends allude to this little circumstance, and it was never repeated; though it turned out that he had killed his two men previously. The doctor must have, when he got him, said to himself, 'if he is not stolen there is a reason for his paltry price,' and he would go over all the possibilities. So that when he stood still, he would say, 'Ah, this is it;' but then he saw this at once, and lost no time, and did nothing. Had he given the horse one dig with his spurs, or one cut with his whip, or an impatient jerk with his bit, the case would have failed. When a colt it had been brutally used,



and being nervous, it lost its judgment, poor thing, and lost its presence of mind.

One more instance of nearness of the *Nous*. A lady was in front of her lawn with her children, when a mad dog made his appearance, pursued by the peasants. What did she do? What would you have done? Shut your eyes and think. She went straight to the dog, received its head in her thick stuff gown, between her knees, and muffling it up, held it with all her might till the men came up. No one was hurt. Of course, she fainted after it was all right.

We all know (but why should we not know again?) the story of the Grecian mother who saw her child sporting on the edge of the bridge. She knew that a cry would startle it over into the raging stream—she came gently near, and opening her bosom allured the little scapegrace.

I once saw a great surgeon, after settling a particular procedure as to a life-and-death operation, as a general settles his order of battle. He began his work, and at the second cut altered the entire conduct of the operation. No one not in the secret could have told this: not a moment's pause, not a quiver of the face, not a look of doubt. This is the same master power in man, which makes the difference between Sir John Moore and Sir John Cope.

Mrs. Major Robertson, a woman of slight make, great beauty, and remarkable energy, courage, and sense (she told me the story herself), on going up to her bedroom at night—there being no one in the house but a servant girl, in the ground floor—saw a portion of a man's foot projecting from under the bed. She gave no cry of alarm, but shut the door as usual, set down her

candle, and began as if to undress, when she said aloud to herself, with an impatient tone and gesture, 'I've forgotten that key again, I declare'; and leaving the candle burning, and the door open, she went downstairs, got the watchman, and secured the proprietor of the foot, which had not moved an inch. How many women or men could have done, or rather been all this!

JOHN BROWN, *Essays*.

### THE SOLDIER'S TRADE

I HAVE already alluded to the difference hitherto existing between regiments of men associated for purposes of violence, and for purposes of manufacture; in that the former appear capable of self-sacrifice—the latter, not; which singular fact is the real reason of the general lowness of estimate in which the profession of commerce is held, as compared with that of arms. Philosophically, it does not, at first sight, appear reasonable (many writers have endeavoured to prove it unreasonable) that a peaceable and rational person, whose trade is buying and selling, should be held in less honour than an unpeaceable and often irrational person, whose trade is slaying. Nevertheless, the consent of mankind has always, in spite of the philosophers, given precedence to the soldier.

And this is right.

For the soldier's trade, verily and essentially, is not slaying, but being slain. This, without well knowing its own meaning, the world honours it for. A bravo's trade is slaying; but the world has never respected bravos more than merchants: the reason it honours the soldier is, because he holds his life at the service of

the State. Reckless he may be—fond of pleasure or of adventure—all kinds of bye-motives and mean impulses may have determined the choice of his profession, and may affect (to all appearance exclusively) his daily conduct in it; but our estimate of him is based on this ultimate fact—of which we are well assured—that, put him in a fortress breach, with all the pleasures of the world behind him, and only death and his duty in front of him, he will keep his face to the front; and he knows that this choice may be put to him at any moment, and has beforehand taken his part—virtually takes such part continually—does, in reality, die daily.

JOHN RUSKIN, *Unto this Last*.

## THE DISCHARGED SOLDIER

My homeward course led up a long ascent,  
Where the road's watery surface, to the top  
Of that sharp rising, glittered to the moon  
And bore the semblance of another stream  
Stealing with silent lapse to join the brook  
That murmured in the vale. All else was still;  
No living thing appeared in earth or air,  
And, save the flowing water's peaceful voice,  
Sound there was none—but, lo! an uncouth shape,  
Shown by a sudden turning of the road,  
So near that, slipping back into the shade  
Of a thick hawthorn, I could mark him well,  
Myself unseen. He was of stature tall,  
A span above man's common measure, tall,  
Stiff, lank, and upright; a more meagre man  
Was never seen before by night or day.  
Long were his arms, pallid his hands; his mouth

Looked ghastly in the moonlight : from behind,  
A mile-stone propped him ; I could also ken  
That he was clothed in military garb,  
Though faded, yet entire. Companionless,  
No dog attending, by no staff sustained,  
He stood, and in his very dress appeared  
A desolation, a simplicity,  
To which the trappings of a gaudy world  
Make a strange back-ground. From his lips, ere long,  
Issued low muttered sounds, as if of pain  
Or some uneasy thought ; yet still his form  
Kept the same awful steadiness—at his feet  
His shadow lay, and moved not. From self-blame  
Not wholly free, I watched him thus ; at length  
Subduing my heart's specious cowardice,  
I left the shady nook where I had stood  
And hailed him. Slowly from his resting-place  
He rose, and with a lean and wasted arm  
In measured gesture lifted to his head  
Returned my salutation ; then resumed  
His station as before ; and when I asked  
His history, the veteran, in reply,  
Was neither slow nor eager ; but, unmoved,  
And with a quiet uncomplaining voice,  
A stately air of mild indifference,  
He told in few plain words a soldier's tale—  
That in the Tropic Islands he had served,  
Whence he had landed scarcely three weeks past ;  
That on his landing he had been dismissed,  
And now was travelling towards his native home.  
This heard, I said, in pity, ' Come with me.'  
He stooped, and straightway from the ground took up  
An oaken staff by me yet unobserved—

A staff which must have dropt from his slack hand  
And lay till now neglected in the grass.  
Though weak his step and cautious, he appeared  
To travel without pain, and I beheld,  
With an astonishment but ill suppressed,  
His ghostly figure moving at my side ;  
Nor could I, while we journeyed thus, forbear  
To turn from present hardships to the past,  
And speak of war, battle, and pestilence,  
Sprinkling the talk with question, better spared,  
On what he might himself have seen or felt.  
He all the while was in demeanour calm,  
Concise in answer ; solemn and sublime  
He might have seemed, but that in all he said  
There was a strange half-absence, as of one  
Knowing too well the importance of his theme,  
But feeling it no longer. Our discourse  
Soon ended, and together on we passed  
In silence through a wood gloomy and still.  
Up-turning, then, along an open field,  
We reached a cottage. At the door I knocked,  
And earnestly to charitable care  
Commended him as a poor friendless man,  
Belated and by sickness overcome.  
Assured that now the traveller would repose  
In comfort, I entreated that henceforth  
He would not linger in the public ways,  
But ask for timely furtherance and help  
Such as his state required. At this reproof,  
With the same ghastly mildness in his look,  
He said, ‘ My trust is in the God of Heaven,  
And in the eye of him who passes me ! ’

WILLIAM WORDSWORTH, *The Prelude*.

## THE HERITAGE OF CHIVALRY

WE have all pictured to ourselves, again and again, how the lady sat in her bower with her embroidery and her missal or romance, and saw from her lattice window her knight going from the castle with lance and pennon, hoping to meet his foe : how the minstrel recited in the castle hall the feats of arms of this or that hero in some distant battle-field ; and how the matron or the maiden heard those feats, and thought with silent joy that it was her lord, her husband, or her lover, whose deeds were thus winning the praises of the troubadour, and the applause of the listening knights and squires. We have all seen in imagination the tournament, with the pomp and splendour of its mimic contests : contests which surpassed the Olympic and Corinthian games of classic antiquity, not only in their gorgeous show, but still more in the presence of the ladies, noble in birth, and fame, and beauty ; whose scarf, or glove, the combatants wore as the token of that favour which was their highest incentive to distinguish themselves ; and from whose hands the conquerors received the prize of skill and bravery ; while the honourably vanquished might be sure that he would have the hardly less welcome lot of being cared for by the same ladies, who never shrank from this their acknowledged and well fulfilled duty of tending the wounded knight.

Perhaps too we have listened in fancy to the proceedings of the so-called Courts or Parliaments of Love, in which the ladies were wont to hear questions of gallantry gravely argued on both sides by poets pleading in verse, and then to give their judgements according to the logical and metaphysical rules which the schoolmen





### A MEDIEVAL TOURNAMENT

In the centre two knights tilting in the lists while the court and ladies look on ; in the top left-hand corner two heralds. From an ivory carving

applied to theological enquiries. But I can now but remind my reader that such things were; and must hasten forward, leaving ungathered flowers that would make many a wreath and nosegay.

The golden age of chivalry was the period from about the middle of the eleventh to the end of the fourteenth century. We may say, with Gibbon, that the Crusades were at once a cause and an effect of chivalry. In the Crusades the spirit of knighthood, with all its characteristic features, actuated vast bodies of men of every rank and nation, and found a foe believed by all Christendom to be to it what the individual robber and plunderer was to the knight errant who went forth in his own country to defend or rescue the widow and orphan and their possessions, or the traveller along the road which passed the castle of some powerful though unworthy baron. The chivalry at home was kept alive, and raised to its highest energy, both in man and woman, by the chivalry in the Holy Land. It is in this period that the chief institutions of chivalry took their rise, or reached their full form; while their ruder features were gradually softened with the increasing refinement of the times, till they presented that aspect with which we find them in the day of Edward III. and the Black Prince, as drawn by Froissart or Chaucer, or in the romances which were then written or remodelled out of older materials, and which show that even in the estimation of other nations the English court then afforded the pattern of knighthood for Christendom.

Thenceforward the outward forms of chivalry began to decay; very gradually indeed, and not without apparent resuscitations from time to time. But no real revival was possible; for the immortal spirit was

seeking new habitations for itself, more fitted to the new world which was succeeding to that of the Middle Ages. And perhaps Cervantes, by helping to tear up with his merciless satire the last remnants of an honest faith in the old forms of chivalry, did as real, though we cannot say as genial, a service to the cause of chivalry itself, as Spenser did in endeavouring to preserve its spirit by transferring it to the region of allegory. The last expiring token of the old spirit in the old forms which I have found, is in the records of the Knights of Malta—the Knights Hospitallers of St. John of Jerusalem—when the news of the great earthquake in Sicily, in 1783, arrived at Malta. Then those poor feeble-minded sybarites remembered for a moment their manhood and their knighthood, and their vows as Hospitallers: they manned their galleys, and, with food and clothing and medicines, and the consolations of their faith, were speedily seen, in their half-military, half-priestly garb—the armour covered by the black robe with the white cross—at the bedsides of the wounded and the dying, as they lay amid the still tottering ruins of their devastated houses. In a very few years, in that same generation, the Order had passed away for ever: but it is pleasant to him who stands in the palace of the Grand Masters among the trophies of their former greatness, or treads the aisles of the cathedral of St. John, where every step is upon the emblazoned gravestone of a knight, to think of this, and not of any less worthy deed, as their last act.

‘ The knight’s bones are dust,  
And his good sword rust :  
His soul is with the saints, I trust ’ :—

but he has left to us an imperishable and a rich inherit-

‘ The knight’s bones . . . ’] From Coleridge.

ance, won for us by him. To him we owe our MANNERS—all that world of existence implied in the names LADY and GENTLEMAN. Through the Middle Ages it was 'Our Lady,' the Virgin mother, who embodied and represented to all men and women, from the prince to the peasant, their ideals of womanhood and ladyhood. In modern times St. Paul has been held to be the model of a gentleman; in whose acts and writings are found all the principles, maxims, and spirit of a character entirely chivalrous, in the amplest sense of the term: while one of our old dramatists has ventured, in words of touching tenderness and reverence, to point to a yet higher realization of that ideal;—

‘The best of men  
That e’er wore earth about him, was a sufferer,  
A soft, meek, patient, humble, tranquil spirit;  
The first true gentleman that ever breathed.’

And it was the transference of these Christian ethics into the practice of common, daily, worldly life, in rude, half-barbarous times, which we owe to the knights and ladies of the Middle Ages; a transference effected slowly, and with much mixture of evil with the good; nor is the work nearly completed yet; but the worth of it can hardly be overrated.

There is not indeed all, but there is much, truth in the old motto, ‘Manners makyth man.’ Manners, like laws, create a region and atmosphere of virtue within which all good more easily lives and grows, and evil finds it harder to maintain itself. How large a portion of the small, spontaneous kindnesses of hourly life, in which, after all, so much of our happiness

one of our old dramatists] Thomas Dekker.

consists, are not only unknown, but impossible, where habitual, unaffected politeness is wanting.

But manners are good, not only as affording a fairer field for the exercise of the higher virtues, but good in themselves. They are a real part of the beauty and grace of our human life. Courtesy, and self-possession, and deference and respect for others; modesty and gentleness towards all men, and recognition in all of the true gold of humanity, whether it bear the guinea stamp or no; love of truth and honour; and not only readiness, but eagerness to help the weak, and defend their cause against the strong; and all these irradiated and glorified, as often as may be, by that sentiment which

*shine* ' Gives to every power a double power,  
Above their functions and their offices ' ;—

these are the things which make the lady and the gentleman.

And if it should seem as though the chivalry of our own times is reduced to something less noble than that of old, when men risked life, and things dearer than life, in defending the weak and attacking the oppressor in his strongholds—when the hardness of the actual fight against evil-doers was not exaggerated in the romances which pictured the knights contending with dragons and enchanters and giants—we must remember that our nineteenth century world is yet far from cleared of the monstrous powers of evil, which still oppress and devour the weak; and that a battle, not really less resolute, nor, if need be, less desperate, than those of old, is still carried on by those who, under the modest guise of common life, are fighting in the true spirit of

chivalry—uniting the most adventurous enthusiasm with the most patient endurance, and both with the gentlest service of the poor, the weak, and the oppressed; and, what is most worthy of admiration, the service of the morally poor, and weak, and oppressed, who, but for such deliverers, must remain in a house of bondage darker than can be built or barred by earthly hands.

But whether we are content with the chivalry of manners, or aspire to a place in the brotherhood of the chivalry of action, our principles, our maxims, and our examples have come down to us as an inheritance from the past:—an inheritance common to all who care to claim it; and won for us by the old knights, fighting in the name of God and of their ladies.

SIR EDWARD STRACHEY, *An Essay on Chivalry*.

### A VERY PERFECT KNIGHT

A KNIGHT there was, and that a worthy man,  
That from the timè that he first began  
To riden out, he lovèd chivalry,  
Truth and honoúr, freedom and courtesy.  
Full worthy was he in his lordè's werrè,  
And thereto had he ridden (no man ferrè)  
As well in Christendom as Heathenness,  
And ever honoured for his worthiness.  
At mortal battles had he been fifteen,  
And foughten for our faith at Tremezene  
In listès thries, and aye slain his foe.  
This ilkè worthy knight had been also  
Sometimè with the lord of Palaty

werrè] war.

thereto] moreover.

ferrè] farther.

Tremezene] a Moorish kingdom. thries] thrice.

ilkè] same.

Palaty] a Christian lordship in Anatolia.





‘ A KNIGHT THERE WAS, AND THAT A WORTHY MAN ’

A sixteenth-century equestrian statue of a knight, from a tomb in Verona

Against another heathen in Turkey ;  
 And evermore he had a sovereign price.  
 And though that he was worthy, he was wise,  
 And of his port as meek as is a maid.  
 He never yet no villainy ne said  
 In all his life, unto no manner wight.  
 He was a very perfect gentle knight.

GEOFFREY CHAUCER, *The Prologue*.

## NOBLE MANNERS

THERE is nothing comparable for moral force to the charm of truly noble manners. The mind is, in comparison, only slightly and transiently impressed by heroic actions, for these are felt to be but uncertain signs of a heroic soul ; nothing less than a series of them, more sustained and varied than circumstances are ever found to demand, could assure us, with the infallible certainty required for the highest power of example, that they were the faithful reflex of the ordinary spirit of the actor.\* The spectacle of patient suffering, though not so striking, is morally more impressive ; for we know that

Action is transitory—a step, a blow,  
 The motion of a muscle this way or that—  
 'Tis done ; and, in the after vacancy,  
 We wonder at ourselves, like men betrayed ;  
 Suffering is permanent, obscure, and dark,  
 And has the nature of infinity. ✕

had . . . price] won highest renown.

villainy] ungentle speech.

Action is transitory . . .] From Wordsworth's *The Borderers*, ll. 1539-44. (In the last line 'has' should be 'shares'.)

The mind, however, has a very natural repugnance to the sustained contemplation of this species of example, and is much more willingly persuaded by a spectacle precisely the reverse—namely, that of goodness actually upon the earth triumphant, and bearing in its ordinary demeanour, under whatever circumstances, the lovely stamp of obedience to that highest and most rarely-fulfilled commandment, ‘Rejoice evermore.’ Unlike action or suffering, such obedience is not so much the way to heaven, as a picture, say rather a part, of heaven itself; and truly beautiful manners will be found upon inspection to involve a continual and visible compliance with that apostolical injunction. A right obedience of this kind must be the crown and completion of all lower kinds of obedience. It is not compatible with the bitter humiliations of the habit of any actual sin; it excludes selfishness, since the condition of joy, as distinguished from pleasure, is generosity, and a soul in the practice of going forth from itself; it is no sensual partiality for the ‘bright side’ of things, no unholy repugnance to the consideration of sorrow; but a habit of lifting life to a height at which all sides of it become bright, and all moral difficulties intelligible: in action it is a salubrity about which doctors will not disagree; in the countenance it is a loveliness which connoisseurs will not dispute; in the demeanour it is a lofty gentleness, which, without pride, patronises all the world, and which, without omitting the minutest temporal obligations or amenities, does everything with an air of immortality.

COVENTRY PATMORE, *Principle in Art.*

## THE LANTERN-BEARERS

TOWARD the end of September, when school-time was drawing near and the nights were already black, we would begin to sally from our respective villas, each equipped with a tin bull's-eye lantern. The thing was so well known that it had worn a rut in the commerce of Great Britain ; and the grocers, about the due time, began to garnish their windows with our particular brand of luminary. We wore them buckled to the waist upon a cricket belt, and over them, such was the rigour of the game, a buttoned top-coat. They smelled noisomely of blistered tin ; they never burned aright, though they would always burn our fingers ; their use was naught ; the pleasure of them merely fanciful ; and yet a boy with a bull's-eye under his top-coat asked for nothing more. The fishermen used lanterns about their boats, and it was from them, I suppose, that we had got the hint ; but theirs were not bull's-eyes, nor did we ever play at being fishermen. The police carried them at their belts, and we had plainly copied them in that ; yet we did not pretend to be policemen. Burglars, indeed, we may have had some haunting thoughts of ; and we had certainly an eye to past ages when lanterns were more common, and to certain story-books in which we had found them to figure very largely. But take it for all in all, the pleasure of the thing was substantive ; and to be a boy with a bull's-eye under his top-coat was good enough for us.

When two of these asses met, there would be an anxious ' Have you got your lantern ? ' and a gratified ' Yes ! ' That was the shibboleth, and very needful

too ; for, as it was the rule to keep our glory contained, none could recognise a lantern-bearer, unless (like the polecat) by the smell. Four or five would sometimes climb into the belly of a ten-man lugger, with nothing but the thwarts above them—for the cabin was usually locked, or choose out some hollow of the links where the wind might whistle overhead. There the coats would be unbuttoned and the bull's-eyes discovered ; and in the chequering glimmer, under the huge windy hall of the night, and cheered by a rich steam of toasting tinware, these fortunate young gentlemen would crouch together in the cold sand of the links or on the scaly bilges of the fishing-boat, and delight themselves with inappropriate talk. Woe is me that I may not give some specimens—some of their foresights of life, or deep inquiries into the rudiments of man and nature, these were so fiery and so innocent, they were so richly silly, so romantically young. But the talk, at any rate, was but a condiment ; and these gatherings themselves only accidents in the career of the lantern-bearer. The essence of this bliss was to walk by yourself in the black night ; the slide shut, the top-coat buttoned ; not a ray escaping, whether to conduct your footsteps or to make your glory public : a mere pillar of darkness in the dark ; and all the while, deep down in the privacy of your fool's heart, to know you had a bull's-eye at your belt, and to exult and sing over the knowledge.

R. L. STEVENSON, *Across the Plains*, 1850-1891

By kind permission of Messrs. Chatto & Windus. 1850-1891

NOTE.—In Stevenson's hands the bull's-eye becomes an emblem of the secret joy which may sustain a man through a life outwardly the most dull and cheerless. ' His life from without may seem but a rude mound of mud ; there will be some golden chamber in the heart of it, in which he dwells delighted.'

## WHAT IT ALL COMES TO

THIS is no tract upon morals. It is a handbook to pleasures. But morals make up such a big part of life that you cannot talk long about anything else without finding that, here too, some matter of conduct comes in. So out with it straight and on with our business.

There is a notion, common among hobbledehoys, that 'experience' can be widened by a loss of self-control. Some of them will misbehave themselves just to 'see life.' Diddled by stale figures of speech, a lad at the university will get drunk 'just to have the experience,' or do something worse because he wants to have 'experienced everything' or to 'know the whole of life.' And some half-sane or trashy-hearted writers of fuller age have erected this mess of vague thought into a kind of philosophy. Life they regard as an opportunity for collectorship, and they think of any new thing, noble or foul, that one does or sees as an addition to one's collection and an enrichment of one's personality; it makes one's life, they fancy, fuller and more complete, more richly hung with notable pictures; it enlarges a man's knowledge of his own soul and helps him to gain a deeper insight into the heart and meaning of the whole world. It is said that Oscar Wilde, when slowly dying of a retributive disease, with all his splendid gifts already dead before his body, was still chattering about the amplitude of the career of moral uncontrol.

These ethics of the dust rest wholly on one blunder. They assume that every novel step which you take must needs increase your experience and not diminish it.



Their algebra of experience recognises only the positive sign. They reckon with no *minus* experiences. They think of the clean boy who gives up his cleanness as if he had added something to his experience and subtracted nothing ; whereas, at every loss of self-control, you make some exchange of the spacious lightsome experience of moral autonomy for the dark and narrow experience of moral helplessness : you always come off a net loser, your treasury of experience depleted on balance, your vision of life more or less blurred, your register of experience smudged, your faculty for delight perceptibly enfeebled. Burns had tried the thing out: he knew all about it when he wrote, of uncontrol,

It hardens all within  
And petrifies the feeling.

He and a few other possessors of genius have done some wonderful things though they lived, off and on, in the sensual sty, and died in it. Marlowe and Morland and Burns and Mangan and Wilde, all had time, before they quenched their own light, to show what their continued splendour might have been. But that makes out no case for self-destruction. And, short of total self-destruction, you cannot defile the temple without dimming its windows. Defile it much and your experience of life may dwindle down to a mere pin-point, all sensation and vision and memory contracting, as it does in shattered rakes, to the sense of the prick of one joyless craving that frustrated all its hopes of satisfaction long ago. Defile it only a little, and something is lost already of the radiant receptiveness of the delighted spirit with no ugly secrets to keep. It was no random wording that made the ' seeing ' of

God the special beatitude of the pure in heart, or that gave the gift of a transfiguring vision to 'minds innocent and quiet' in the great Cavalier's poem. The man 'who is not passion's slave' wins more than the love of Hamlet. A quick and lightsome alertness waits at the side of his bed every morning, to enter into his senses as soon as he wakes. 'Get up,' it says, 'you have great things to see to-day.' Perhaps the weather has changed in the night, and he experiences a chuckling glee as if the everlastingly amusing changefulness of weather had never struck him before. All these ancient marvels come to him again with an unexhausted freshness; the sun is up, shining on bejewelled grass; it is all old beyond words and yet it is great news. Unconsciously he gives the thanks that consists in infinite silent contentment and sings the hymn of a blithe wonder at wonder's own indefeasible freshness:

Thou dost preserve the stars from wrong,  
And the most ancient heavens through thee are fresh and strong.

Whew! This talking of morals is pretty hot work for one who has less of Wordsworth or of Ecclesiastes about him than of a monkey much given to jumping about on the trees of our Paradise. Still, the thing forced itself in; even the monkeys have to keep fit in order to get the best out of their jumping.

C. E. MONTAGUE, *The Right Place*.

By kind permission of the author and Messrs. Chatto & Windus.

the great Cavalier's poem] Richard Lovelace's *To Althea from Prison*.

Thou dost preserve . . . ] From Wordsworth's *Ode to Duty*.  
a monkey . . . Paradise] See *A Portrait* in R. L. Stevenson's *Underwoods*.

## V

### PICTURESQUE EDINBURGH

THE ancient and famous metropolis of the North sits overlooking a windy estuary from the slope and summit of three hills. No situation could be more commanding for the head city of a kingdom ; none better chosen for noble prospects. From her tall precipice and terraced gardens she looks far and wide on the sea and broad champaigns. To the east you may catch at sunset the spark of the May lighthouse, where the Firth expands into the German Ocean ; and away to the west, over all the carse of Stirling, you can see the first snows upon Ben Ledi.

But Edinburgh pays cruelly for her high seat in one of the vilest climates under heaven. She is liable to be beaten upon by all the winds that blow, to be drenched with rain, to be buried in cold sea fogs out of the east, and powdered with the snow as it comes flying southward from the Highland hills. The weather is raw and boisterous in winter, shifty and ungenial in summer, and a downright meteorological purgatory in the spring. The delicate die early, and I, as a survivor, among bleak winds and plumping rain, have been sometimes tempted to envy them their fate. For all who love shelter and the blessings of the sun, who hate dark weather and perpetual tilting against squalls, there could scarcely be found a more unhomely and harassing place of residence. Many such aspire angrily after that Somewhere-else of

the imagination, where all troubles are supposed to end. They lean over the great bridge which joins the New Town with the Old—that windiest spot, or high altar, in this northern temple of the winds—and watch the trains smoking out from under them and vanishing into the tunnel on a voyage to brighter skies. Happy the passengers who shake off the dust of Edinburgh, and have heard for the last time the cry of the east wind among her chimney-tops! And yet the place establishes an interest in people's hearts; go where they will, they find no city of the same distinction; go where they will, they take a pride in their old home.

Venice, it has been said, differs from all other cities in the sentiment which she inspires. The rest may have admirers; she only, a famous fair one, counts lovers in her train. And indeed, even by her kindest friends, Edinburgh is not considered in a similar sense. These like her for many reasons, not any one of which is satisfactory in itself. They like her whimsically, if you will, and somewhat as a virtuoso dotes upon his cabinet. Her attraction is romantic in the narrowest meaning of the term. Beautiful as she is, she is not so much beautiful as interesting. She is pre-eminently Gothic, and all the more so since she has set herself off with some Greek airs, and erected classic temples on her crags. In a word, and above all, she is a curiosity.

The Palace of Holyrood has been left aside in the growth of Edinburgh; and stands grey and silent in a workman's quarter and among breweries and gas works. It is a house of many memories. Great people of yore, kings and queens, buffoons and grave ambassadors, played their stately farce for centuries in Holyrood. Wars have been plotted, dancing has lasted deep into



EDINBURGH FROM THE CASTLE

the night, murder has been done in its chambers. There Prince Charlie held his phantom levées, and in a very gallant manner represented a fallen dynasty for some hours. Now, all these things of clay are mingled with the dust, the king's crown itself is shown for sixpence to the vulgar; but the stone palace has outlived these changes.

For fifty weeks together, it is no more than a show for tourists and a museum of old furniture; but on the fifty-first, behold the palace re-awakened and mimicking its past.

*Lord Principal*  
The Lord Commissioner, a kind of stage sovereign, sits among stage courtiers; a coach and six and clattering escort come and go before the gate; at night, the windows are lighted up, and its near neighbours, the workmen, may dance in their own houses to the palace music. And in this the palace is typical. There is a spark among the embers; from time to time the old volcano smokes. Edinburgh has but partly abdicated, and still wears, in parody, her metropolitan trappings. Half a capital and half a country town, the whole city leads a double existence; it has long trances of the one and flashes of the other; like the king of the Black Isles, it is half-alive and half a monumental marble. There are armed men and cannon in the citadel overhead; you may see the troops marshalled on the high parade; and at night after the early winter evenfall, and in the morning before the laggard winter dawn, the wind carries abroad over Edinburgh the sound of drums and bugles. Grave judges sit bewigged in what was once the scene of imperial deliberations.

Close by in the High Street perhaps the trumpets may sound about the stroke of noon; and you see a troop of citizens in tawdry masquerade; tabard above, heather-



mixture trouser below, and the men themselves trudging in the mud among unsympathetic bystanders. The grooms of a well-appointed circus tread the streets with a better presence. And yet these are the Heralds and Pursuivants of Scotland, who are about to proclaim a new law of the United Kingdom before two score boys, and thieves, and hackney-coachmen. Meanwhile every



HOLYROOD PALACE

hour the bell of the University rings out over the hum of the streets, and every hour a double tide of students, coming and going, fills the deep archways.

And lastly, one night in the spring-time—or say one morning rather, at the peep of day—late folk may hear the voices of many men singing a psalm in unison from a church on one side of the old High Street; and a little after, or perhaps a little before, the sound of many men singing a psalm in unison from another church on the opposite side of the way. There will be something in

the words about the dew of Hermon and how goodly it is to see brethren dwelling together in unity. And the late folk will tell themselves that all this singing denotes the conclusion of two yearly ecclesiastical parliaments—the parliaments of Churches which are brothers in many admirable virtues, but not specially like brothers in this particular of a tolerant and peaceful life.

Again, meditative people will find a charm in a certain consonancy between the aspect of the city and its odd and stirring history. Few places, if any, offer a more barbaric display of contrasts to the eye. In the very midst stands one of the most satisfactory crags in nature—a Bass Rock upon dry land rooted in a garden, shaken by passing trains, carrying a crown of battlements and turrets, and describing its warlike shadow over the liveliest and brightest thoroughfare of the new town. From their smoky beehives, ten stories high, the unwashed look down upon the open squares and gardens of the wealthy; and gay people sunning themselves along Princes Street, with its mile of commercial palaces all beflagged upon some great occasion, see, across a gardened valley set with statues, where the washings of the old town flutter in the breeze at its high windows. And then, upon all sides, what a clashing of architecture! In this one valley, where the life of the town goes most busily forward, there may be seen, shown one above and behind another by the accidents of the ground, buildings in almost every style upon the globe. Egyptian and Greek temples, Venetian palaces and Gothic spires, are huddled one over another in a most admired disorder; while, above all, the brute mass of the Castle and the summit of Arthur's Seat look down upon these imitations with a becoming dignity,

as the works of Nature may look down upon the monuments of Art. But Nature is a more indiscriminate patroness than we imagine, and in no way frightened of a strong effect.\* The birds roost as willingly among the Corinthian capitals as in the crannies of the crag; the same atmosphere and daylight clothe the eternal rock and yesterday's imitation portico; and as the soft northern sunshine throws out everything into a glorified distinctness—or easterly mists, coming up with the blue evening, fuse all these incongruous features into one, and the lamps begin to glitter along the street, and faint lights to burn in the high windows across the valley—the feeling grows upon you that this also is a piece of nature in the most intimate sense; that this profusion of eccentricities, this dream in masonry and living rock is not a drop-scene in a theatre, but a city in the world of everyday reality, connected by railway and telegraph-wire with all the capitals of Europe, and inhabited by citizens of the familiar type, who keep ledgers, and attend church, and have sold their immortal portion to a daily paper.\* By all the canons of romance, the place demands to be half-deserted and leaning towards decay; birds we might admit in profusion, the play of the sun and winds, and a few gypsies encamped in the chief thoroughfare; but these citizens, with their cabs and tramways, their trains and posters, are altogether out of key. Chartered tourists, they make free with historic localities, and rear their young among the most picturesque sites with a grand human indifference. To see them thronging by in their neat clothes and conscious moral rectitude, and with a little air of possession that verges on the absurd, is not the least striking feature of the place.

*From a ... a ...*

And the story of the town is as eccentric as its appearance. For centuries it was a capital thatched with heather, and more than once, in the evil days of English invasion, it has gone up in flame to heaven, a beacon to ships at sea. It was the jousting-ground of jealous nobles, not only on Greenside or by the King's Stables, where set tournaments were fought to the sound of trumpets and under the authority of the royal presence, but in every alley where there was room to cross swords, and in the main street, where popular tumult under the Blue Blanket alternated with the brawls of outlandish clansmen and retainers. Down in the palace John Knox reproved his queen in the accents of modern democracy. In the town, in one of those little shops plastered like so many swallows' nests among the buttresses of the old Cathedral, that familiar autocrat, James VI., would gladly share a bottle of wine with George Heriot the goldsmith. Up on the Pentland Hills, that so quietly look down on the Castle with the city lying in waves around it, those mad and dismal fanatics, the Sweet Singers, haggard from long exposure on the moors, sat day and night with 'tearful psalms' to see Edinburgh consumed with fire from heaven, like another Sodom or Gomorrah. There, in the Grass-market, stiff-necked, covenanting heroes offered up the often unnecessary, but not less honourable, sacrifice of their lives, and bade eloquent farewell to sun, moon, and stars, and earthly friendships, or died silent to the roll of drums. Down by yon outlet rode Grahame of Claverhouse and his thirty dragoons, with the town beating to arms behind their horses' tails—a sorry

the Blue Blanket] the banner of the Edinburgh Trades.  
 the Sweet Singers] a small band of seventeenth-century fanatics, who thought the end of the world at hand.

handful thus riding for their lives, but with a man at the head who was to return in a different temper, make a dash that staggered Scotland to the heart, and die happily in the thick of fight. There Aikenhead was hanged for a piece of boyish incredulity; there, a few years afterwards, David Hume ruined Philosophy and Faith, an undisturbed and well-reputed citizen; and thither, in yet a few years more, Burns came from the plough-tail, as to an academy of gilt unbelief and artificial letters. There, when the great exodus was made across the valley, and the new town began to spread abroad its draughty parallelograms and rear its long frontage on the opposing hill, there was such a flitting, such a change of domicile and dweller, as was never excelled in the history of cities: the cobbler succeeded the earl; the beggar ensconced himself by the judge's chimney; what had been a palace was used as a pauper refuge; and great mansions were so parcelled out among the least and lowest in society, that the hearth-stone of the old proprietor was thought large enough to be partitioned off into a bedroom by the new.

R. L. STEVENSON, *Edinburgh: Picturesque Notes.*

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WRITTEN IN EDINBURGH

EVEN thus, methinks, a city reared should be,  
Yea, an imperial city, that might hold  
Five times a hundred noble towns in fee,  
And either with their might of Babel old,  
Or the rich Roman pomp of empery  
Might stand compare, highest in arts enrolled,  
Highest in arms; brave tenement for the free,  
Who never crouch to thrones, or sin for gold.

Thus should her towers be raised—with vicinage  
Of clear bold hills, that curve her very streets,  
As if to vindicate, 'mid choicest seats  
Of art, abiding Nature's majesty ;  
And the broad sea beyond, in calm or rage  
Chainless alike, and teaching Liberty.

ARTHUR HENRY HALLAM.

### LONDON FROM HIGHGATE HILL

COLERIDGE sat on the brow of Highgate Hill, in those years, looking down on London and its smoke-tumult, like a sage escaped from the inanity of life's battle ; attracting towards him the thoughts of innumerable brave souls still engaged there . . . The practical intellects of the world did not much heed him, or carelessly reckoned him a metaphysical dreamer : but to the rising spirits of the young generation he had this dusky sublime character, and sat there as a kind of *Magus*, girt in mystery and enigma ; his Dodona oak-grove (Mr. Gilman's house at Highgate) whispering strange things, uncertain whether oracles or jargon.

The Gilmans did not encourage much company, or excitement of any sort, round their sage ; nevertheless access to him, if a youth did reverently wish it, was not difficult. He would stroll about the pleasant garden with you, sit in the pleasant rooms of the place—perhaps take you to his own peculiar room, high up, with a rearward view, which was the chief view of all. A really charming outlook, in fine weather. Close at hand, wide sweep of flowery leafy gardens, their few houses mostly hidden, the very chimney-pots veiled

Dodona] in the N.W. of Greece. Here, in an oak-grove, was an ancient oracle of Zeus.



under blossomy umbrage, flowed gloriously down hill ; gloriously issuing in wide-tufted undulating plain-country, rich in all charms of field and town. Waving blooming country of the brightest green ; dotted all over with handsome villas, handsome groves ; crossed by roads and human traffic, here inaudible or heard only as a musical hum : and behind all swam, under olive-tinted haze, the illimitable limitary ocean of London, with its domes and steeples definite in the sun, big Paul's and the many memories attached to it hanging over all. Nowhere, of its kind, could you see a grander prospect on a bright summer day, with the set of the air going southward,—southward, and so draping with the city-smoke not *you* but the city. Here for hours would Coleridge talk, concerning all conceivable things ; and liked nothing better than to have an intelligent, or failing that, even a silent and patient human listener.

THOMAS CARLYLE, *Life of Sterling*.

### CROSSING WESTMINSTER BRIDGE

EARTH has not anything to show more fair :  
Dull would he be of soul who could pass by  
A sight so touching in its majesty :  
This City now doth, like a garment, wear  
The beauty of the morning ; silent, bare,  
Ships, towers, domes, theatres, and temples lie  
Open unto the fields, and to the sky ;  
All bright and glittering in the smokeless air.  
Never did sun more beautifully steep  
In his first splendour, valley, rock, or hill ;  
Ne'er saw I, never felt, a calm so deep !  
The river glideth at his own sweet will :  
Dear God ! the very houses seem asleep ;  
And all that mighty heart is lying still !

WILLIAM WORDSWORTH.

## LONDON FROM SHOOTER'S HILL

A MIGHTY mass of brick, and smoke, and shipping,  
 Dirty and dusky, but as wide as eye  
 Could reach, with here and there a sail just skipping  
 In sight, then lost amidst the forestry  
 Of masts ; a wilderness of steeples peeping  
 On tiptoe through their sea-coal canopy ;  
 A huge, dun cupola, like a foolscap crown  
 On a fool's head—and there is London Town !

LORD BYRON, *Don Juan*.

## THE STONES OF VENICE

SINCE first the dominion of men was asserted over the ocean, three thrones, of mark beyond all others, have been set upon its sands : the thrones of Tyre, Venice, and England. Of the First of these great powers only the memory remains ; of the Second, the ruin ; the Third, which inherits their greatness, if it forget their example, may be led through prouder eminence to less pitied destruction.

The exaltation, the sin, and the punishment of Tyre have been recorded for us in perhaps the most touching words ever uttered by the Prophets of Israel against the cities of the stranger. But we read them as a lovely song ; and close our ears to the sternness of their warning : for the very depth of the fall of Tyre has blinded us to its reality, and we forget, as we watch the bleaching of the rocks between the sunshine and the sea, that they were once ‘as in Eden, the garden of God.’

Her successor, like her in perfection of beauty, though

less in endurance of dominion, is still left for our beholding in the final period of her decline : a ghost upon the sands of the sea, so weak—so quiet—so bereft of all but her loveliness, that we might well doubt, as we watched her faint reflection in the mirage of the lagoon, which was the City, and which the Shadow.

I would endeavour to trace the lines of this image before it be for ever lost, and to record, as far as I may, the warning which seems to me to be uttered by every one of the fast-gaining waves, that beat, like passing bells, against the STONES OF VENICE.

JOHN RUSKIN, *The Stones of Venice*.

## VENICE FROM THE EUGANEAN HILLS

BENEATH is spread like a green sea  
The waveless plain of Lombardy,  
Bounded by the vaporous air,  
Islanded by cities fair ;  
Underneath Day's azure eyes  
Ocean's nursling, Venice lies,  
A peopled labyrinth of walls,  
Amphitrite's destined halls,  
• Which her hoary sire now paves  
With his blue and beaming waves.  
Lo ! the sun upsprings behind,  
Broad, red, radiant, half-reclined  
On the level quivering line  
Of the waters crystalline ;  
And before that chasm of light,  
As' within a furnace bright,  
Column, tower, and dome, and spire  
Shine like obelisks of fire,

Pointing with inconstant motion  
 From the altar of dark ocean  
 To the sapphire-tinted skies ;  
 As the flames of sacrifice  
 From the marble shrines did rise,  
 As to pierce the dome of gold  
 Where Apollo spoke of old.

Sun-girt City, thou hast been  
 Ocean's child, and then his queen ;  
 Now is come a darker day,  
 And thou soon must be his prey,  
 If the power that raised thee here  
 Hallow so thy watery bier.

PERCY BYSSHE SHELLEY.

## ROME

NAPLES, *December 22, 1818.*

SINCE I last wrote to you, I have seen the ruins of Rome, the Vatican, St. Peter's, and all the miracles of ancient and modern art contained in that majestic city. The impression of it exceeds anything I have ever experienced in my travels. We stayed there only a week, intending to return at the end of February, and devote two or three months to its mines of inexhaustible contemplation, to which period I refer you for a minute account of it. We visited the Forum and the ruins of the Coliseum every day. The Coliseum is unlike any work of human hands I ever saw before. It is of enormous height and circuit, and the arches built of massy stones are piled on one another, and jut into the blue air, shattered into the forms of overhanging rocks.



## THE FORUM

Seen through the Arch of Septimius Severus

It has been changed by time into the image of an amphitheatre of rocky hills overgrown by the wild olive, the myrtle, and the fig-tree, and threaded by little paths, which wind among its ruined stairs and immeasurable galleries: the copsewood overshadows you as you wander through its labyrinths, and the wild weeds of this climate of flowers bloom under your feet. The arena is covered with grass, and pierces, like the skirts of a natural plain, the chasms of the broken arches around. But a small part of the exterior circumference remains—it is exquisitely light and beautiful; and the effect of the perfection of its architecture, adorned with ranges of Corinthian pilasters, supporting a bold cornice, is such as to diminish the effect of its greatness. The interior is all ruin. I can scarcely believe that when encrusted with Dorian marble and ornamented by columns of Egyptian granite, its effect could have been so sublime and so impressive as in its present state. It is open to the sky, and it was the clear and sunny weather of the end of November in this climate when we visited it, day after day.

Near it is the arch of Constantine, or rather the arch of Trajan; for the servile and avaricious senate of degraded Rome ordered that the monument of his predecessor should be demolished in order to dedicate one to the Christian reptile, who had crept among the blood of his murdered family to the supreme power. It is exquisitely beautiful and perfect. The Forum is a plain in the midst of Rome, a kind of desert full of heaps of stones and pits, and though so near the habitations of men, is the most desolate place you can conceive. The ruins of temples stand in and around it, shattered columns and ranges of others complete, supporting





THE COLISEUM

cornices of exquisite workmanship, and vast vaults of shattered domes distinct with regular compartments, once filled with sculptures of ivory or brass. The temples of Jupiter, and Concord, and Peace, and the Sun, and the Moon, and Vesta, are all within a short distance of this spot. Behold the wrecks of what a great nation once dedicated to the abstractions of the mind ! Rome is a city, as it were, of the dead, or rather of those who cannot die, and who survive the puny generations which inhabit and pass over the spot which they have made sacred to eternity. In Rome, at least in the first enthusiasm of your recognition of ancient time, you see nothing of the Italians. The nature of the city assists the delusion, for its vast and antique walls describe a circumference of sixteen miles, and thus the population is thinly scattered over this space, nearly as great as London. Wide wild fields are enclosed within it, and there are grassy lanes and copses winding among the ruins, and a great green hill, lonely and bare, which overhangs the Tiber. The gardens of the modern palaces are like wild woods of cedar, and cypress, and pine, and the neglected walks are overgrown with weeds. The English burying-place is a green slope near the walls, under the pyramidal tomb of Cestius, and is, I think, the most beautiful and solemn cemetery I ever beheld. To see the sun shining on its bright grass, fresh, when we first visited it, with the autumnal dews, and hear the whispering of the wind among the leaves of the trees which have overgrown the tomb of Cestius, and the soil which is stirring in the sun-warm earth, and to mark the tombs, mostly

The English burying-place] Here Shelley's own ashes now rest, near the grave of Keats.



‘ NEAR IT IS THE ARCH OF CONSTANTINE ’

of women and young people who were buried there, one might, if one were to die, desire the sleep they seem to sleep. Such is the human mind, and so it peoples with its wishes vacancy and oblivion.

I have told you little about Rome ; but I reserve the Pantheon, and St. Peter's, and the Vatican, and Raphael, for my return.

PERCY BYSSHE SHELLEY, *Letters*.



THE TOMB OF CESTIUS

## ATHENS

MANY a more fruitful coast or isle is washed by the blue Aegean, many a spot is there more beautiful or sublime to see, many a territory more ample ; but there was one charm in Attica, which in the same perfection was nowhere else. The deep pastures of Arcadia, the plain of Argos, the Thessalian vale, these had not the gift ; Bœotia, which lay to its immediate north, was notorious for its very want of it. The heavy atmosphere of that Bœotia might be good for vegetation, but it was associated in popular belief with the dulness of the Bœotian intellect : on the contrary, the special purity, elasticity, clearness, and salubrity of the air of Attica, fit concomitant and emblem of its genius, did that for it which earth did not ;—it brought out every bright hue and tender shade of the landscape over which it was spread, and would have illuminated the face even of a more bare and rugged country.

A confined triangle, perhaps fifty miles its greatest length, and thirty its greatest breadth ; two elevated rocky barriers, meeting at an angle ; three prominent mountains, commanding the plain,—Parnes, Pentelicus, and Hymettus ; an unsatisfactory soil ; some streams, not always full ;—such is about the report which the agent of a London company would have made of Attica. He would report that the climate was mild ; the hills were limestone ; there was plenty of good marble ; more pasture land than at first survey might have been expected, sufficient certainly for sheep and goats ; fisheries productive ; silver mines once, but long since worked out ; figs fair ; oil first-rate ; olives in profusion. But what he would not

think of noting down, was, that that olive tree was so choice in nature and so noble in shape, that it excited a religious veneration ; and that it took so kindly to the light soil, as to expand into woods upon the open plain, and to climb up and fringe the hills. He would not think of writing word to his employers, how that clear air, of which I have spoken, brought out, yet blended and subdued, the colours on the marble, till they had a softness and harmony, for all their richness, which in a picture looks exaggerated, yet is after all within the truth. He would not tell, how that same delicate and brilliant atmosphere freshened up the pale olive, till the olive forgot its monotony, and its cheek glowed like the arbutus or beech of the Umbrian hills. He would say nothing of the thyme and thousand fragrant herbs which carpeted Hymettus ; he would hear nothing of the hum of its bees ; nor take much account of the rare flavour of its honey, since Gozo and Minorca were sufficient for the English demand. He would look over the Aegean from the height he had ascended ; he would follow with his eye the chain of islands, which, starting from the Sunian headland, seemed to offer the fabled divinities of Attica, when they would visit their Ionian cousins, a sort of viaduct thereto across the sea : but that fancy would not occur to him, nor any admiration of the dark violet billows with their white edges down below ; nor of those graceful, fan-like jets of silver upon the rocks, which slowly rise aloft like water spirits from the deep, then shiver, and break, and spread, and shroud themselves, and disappear, in a soft mist of foam ; nor of the gentle, incessant heaving and panting of the whole liquid plain ; nor of the long waves, keeping steady time, like





The Olive Harvest. From a Greek vase



The Acropolis or Citadel, in which are the ruins of the principal public buildings

ATHENS

a line of soldiery, as they resound upon the hollow shore,—he would not deign to notice that restless living element at all, except to bless his stars that he was not upon it. Nor the distinct detail, nor the refined colouring, nor the graceful outline and roseate golden hue of the jutting crags, nor the bold shadows cast from Otus or Laurium by the declining sun ;—our agent of a mercantile firm would not value these matters even at a low figure. Rather we must turn for the sympathy we seek to yon pilgrim student, come from a semi-barbarous land to that small corner of the earth, as to a shrine, where he might take his fill of gazing on those emblems and coruscations of invisible unoriginate perfection. It was the stranger from a remote province, from Britain or from Mauritania, who in a scene so different from that of his chilly, woody swamps, or of his fiery choking sands, learned at once what a real University must be, by coming to understand the sort of country, which was its suitable home.

JOHN HENRY NEWMAN, *Historical Sketches*.

### ATHENS, THE EYE OF GREECE

[“ Again, the devil taketh him up into an exceeding high mountain, and sheweth him all the kingdoms of the world, and the glory of them.”—Matt. iv. 8.]

‘ Look once more, ere we leave this specular mount,  
Westward, much nearer by south-west ; behold  
Where on the Aegean shore a city stands,  
Built nobly, pure the air and light the soil—  
Athens, the eye of Greece, mother of arts  
And eloquence, native to famous wits

specular mount] mount of vision.

Or hospitable, in her sweet recess,  
 City or suburban, studious walks and shades.  
 See there the olive-grove of Academe,  
 Plato's retirement, where the Attic bird  
 Trills her thick-warbled notes the summer long ;  
 There, flowery hill, Hymettus, with the sound  
 Of bees' industrious murmur, oft invites  
 To studious musing ; there Ilissus rolls  
 His whispering stream.'

JOHN MILTON, *Paradise Regained*.

## CONSTANTINOPLE

THE winding channel through which the waters of the Euxine flow with a rapid and incessant course towards the Mediterranean received the appellation of Bosphorus, a name not less celebrated in the history than in the fables of antiquity. A crowd of temples and of votive altars, profusely scattered along its steep and woody banks, attested the unskilfulness, the terrors, and the devotion of the Grecian navigators, who, after the example of the Argonauts, explored the dangers of the inhospitable Euxine . . .

The harbour of Constantinople, which may be considered as an arm of the Bosphorus, obtained, in a very remote period, the denomination of the *Golden Horn*. The curve which it describes might be compared to the horn of a stag, or, as it should seem, with more propriety, to that of an ox. The epithet of *golden* was expressive of the riches which every wind wafted from the most distant countries into the secure and capacious port of Constantinople. The river Lycus, formed by

Attic bird] nightingale. the Euxine] the Black Sea.

the conflux of two little streams, pours into the harbour a perpetual supply of fresh water, which serves to cleanse the bottom and to invite the periodical shoals of fish to seek their retreat in that convenient recess. As the vicissitudes of tides are scarcely felt in those seas, the constant depth of the harbour allows goods to be landed on the quays without the assistance of boats ; and it has been observed that in many places the largest vessels may rest their prows against the houses, while their sterns are floating in the water. From the mouth of the Lycus to that of the harbour this arm of the Bosphorus is more than seven miles in length. The entrance is about five hundred yards broad, and a strong chain could be occasionally drawn across it, to guard the port and city from the attack of an hostile navy.

Between the Bosphorus and the Hellespont, the shores of Europe and Asia receding on either side inclose the sea of Marmara, which was known to the ancients by the denomination of Propontis. The navigation from the issue of the Bosphorus to the entrance of the Hellespont is about one hundred and twenty miles. Those who steer their westward course through the middle of the Propontis may at once descry the high lands of Thrace and Bithynia, and never lose sight of the lofty summit of Mount Olympus, covered with eternal snows. They leave on the left a deep gulf, at the bottom of which Nicomedia was seated, the imperial residence of Diocletian ; and they pass the small islands of Cyzicus and Proconnesus before they cast anchor at Gallipoli ; where the sea, which separates Asia from Europe, is again contracted into a narrow channel . . .

Hellespont] Dardanelles.



CONSTANTINOPLE

Showing *The Golden Horn* and, in the foreground, the Mosque (formerly the Church) of Saneta Sophia

We are at present qualified to view the advantageous position of Constantinople; which appears to have been formed by Nature for the centre and capital of a great monarchy. Situated in the forty-first degree of latitude, the Imperial city commanded, from her seven hills, the opposite shores of Europe and Asia; the climate was healthy and temperate, the soil fertile, the harbour secure and capacious; and the approach on the side of the continent was of small extent and easy defence. The Bosphorus and Hellespont may be considered as the two gates of Constantinople; and the prince who possessed those important passages could always shut them against a naval enemy and open them to the fleets of commerce. The preservation of the eastern provinces may, in some degree, be ascribed to the policy of Constantine, as the Barbarians of the Euxine, who in the preceding age had poured their armaments into the heart of the Mediterranean, soon desisted from the exercise of piracy, and despaired of forcing this insurmountable barrier. When the gates of the Hellespont and Bosphorus were shut, the capital still enjoyed, within their spacious inclosure, every production which could supply the wants, or gratify the luxury, of its numerous inhabitants. The sea-coast of Thrace and Bithynia, which languish under the weight of Turkish oppression, still exhibits a rich prospect of vineyards, of gardens, and of plentiful harvests; and the Propontis has ever been renowned for an inexhaustible store of the most exquisite fish, that are taken in their stated seasons without skill and almost without labour. But, when the passages of the Straits were thrown open for trade, they alternately admitted the natural and artificial riches of the north



and south, of the Euxine, and of the Mediterranean. Whatever rude commodities were collected in the forests of Germany and Scythia, as far as the sources of the Tanais and the Borysthenes; whatsoever was manufactured by the skill of Europe or Asia; the corn of Egypt, and the gems and spices of the farthest India, were brought by the varying winds into the port of Constantinople, which, for many ages, attracted the commerce of the ancient world.

EDWARD GIBBON,

*Decline and Fall of the Roman Empire.*

## THE ALHAMBRA

THIS morning I visited the Alhambra; an enchanted palace, whose exquisite beauty baffles the power of language to describe. Its outlines may be drawn,—its halls and galleries, its court-yards and its fountains, numbered; but what skilled limner shall portray in words its curious architecture, the grotesque ornaments, the quaint devices, the rich tracery of the walls, the ceilings inlaid with pearl and tortoise-shell? what language paint the magic hues of light and shade, the shimmer of the sunbeam as it falls upon the marble pavement, and the brilliant panels inlaid with many-coloured stones? Vague recollections fill my mind,—images dazzling but undefined, like the memory of a gorgeous dream. They crowd my brain confusedly, but they will not stay; they change and mingle, like the tremulous sunshine on the wave, till imagination itself is dazzled,—bewildered,—overpowered!

Tanais] Don.

Borysthenes] Dnieper.

What most arrests the stranger's foot within the walls of the Alhambra is the refinement of luxury which he sees at every step. He lingers in the deserted bath,—he pauses to gaze upon the now vacant saloon, where, stretched upon his gilded couch, the effeminate monarch of the East was wooed to sleep by softly-breathing music. What more delightful than this secluded garden, green with the leaf of the myrtle and the orange, and freshened with the gush of fountains, beside whose basin the nightingale still woos the blushing rose? What more fanciful, more exquisite, more like a creation of Oriental magic, than the lofty tower of the Tocador,—its airy sculpture resembling the fretwork of wintry frost, and its windows overlooking the romantic valley of the Darro; and the city, with its gardens, domes, and spires, far, far below? Cool through this lattice comes the summer wind, from the icy summits of the Sierra Nevada. Softly in yonder fountain falls the crystal water, dripping from its marble vase with never-ceasing sound. On every side comes up the fragrance of a thousand flowers, the murmur of innumerable leaves; and overhead is a sky where not a vapour floats,—as soft, and blue, and radiant as the eye of childhood!

Such is the Alhambra of Granada; a fortress,—a palace,—an earthly paradise, a ruin, wonderful in its fallen greatness.

HENRY WADSWORTH LONGFELLOW, *Outre-Mer.*

*Handwritten:* Favorite Longfellow



THE ALHAMBRA *(Madrid)*

View down the Hall of Justice from the South to the  
North End

## VI

### BREAK-UP OF THE ICE ON THE YENESEI

[The little steamer *Thames* lay in the Koorayika, a right-bank tributary of the lower Yenesei, not far above its confluence with the main river.]

WE turned into our berths at half-past nine, having first instituted an anchor watch, in case any further movement of the ice should take place. We had but just fallen asleep when we were suddenly roused by the report that the river was rising rapidly and the ice beginning to break up. We immediately dressed and went on deck. The position of affairs was at once obvious. The melting of the snow down south was evidently going on rapidly, and the river was rising at such speed that it was beginning to flow up all its tributaries in the north. This was a contingency for which we were utterly unprepared. We were anchored opposite the entrance to a little creek, into which it was the Captain's intention to take his ship when the water rose sufficiently high to admit of his doing so. In this little creek he hoped to wait in safety the passing away of the ice. In a moment his plans were utterly frustrated. The entrance to the creek was perfectly high and dry. A strong current was setting up the Koo-ray'-i-ka. Small floes were detaching themselves from the main mass and were running up the open water. In a short time the whole body of the Koo-ray'-i-ka ice broke up, and began to move up-stream. As far as the

Yen-e-say' the tributary stream was soon a mass of pack-ice and floes marching up the river at the rate of three miles an hour. Some of these struck the ship some very ugly blows on the stern, doing considerable damage to the rudder, but open water was beyond, and we were soon out of the press of ice with, we hoped, no irretrievable damage. All this time we had been getting up steam as fast as possible, so as to be ready for any emergency. On the opposite side of the river we could see a haven of perfect safety, a long creek full of water, and having the additional advantage of not being on the scour side of the river. When we had got sufficient steam to turn the engine, we found, to our dismay, that the ice which had already passed us had squeezed us towards the shore, and that there must have been a subsequent fall in the water, for we were at least two feet aground at the stern, and immoveable as a rock. The current was still running up the river, and against it there was no chance of swinging the ship round. A mile astern of us was the edge of the Yen-e-say' ice. There was nothing to be done but to wait. In a short time the river began to rise again rapidly, and with it our hopes that we might float and steam into safety, when suddenly we discovered, to our terror, that the ice on the Yen-e-say' was breaking up, and that a dread phalanx of ice-floes and pack-ice was coming down on us at quick march. On it came, smashed the rudder, ground against the stern of the ship, sometimes squeezing her against the shore so that she pitched and rolled as if she were in a heavy sea, and sometimes she would get between a couple of small floes which seemed to try and lift her bodily out of the water. Once or twice an ice-floe began to climb up the ship's side like a snake.

Some of the sailors got overboard, and scrambled over the pack-ice on to the shore. Others threw their goods and chattels to their comrades ashore. At length an immense ice-floe of irresistible weight struck the ship. There was no alternative but to slip her anchor and allow her to drive with the ice. Away we went up the Koo-ray'-i-ka, the ice rolling and tumbling and squeezing alongside of us, huge lumps climbing one upon the top of another. We were carried along in this way for about a mile, until we were finally jammed into a slight bay, wedged between blocks of pack-ice. Soon afterwards the river fell some five or six feet, the stream slackened, the ice stood still, and the ship and the pack-ice were aground. The ship went through the terrible ordeal bravely. So far she had made no water, and there was no evidence of any injury except to the rudder. This had been broken to pieces, and all trace of it carried away—a loss which it would take some weeks to repair . . .

The question now demanding immediate consideration was what would take place when the ice began to move again. It seemed most probable that the ship would either be stranded on a sandbank or carried down with the ice to sea. The Captain decided that it was wisest to get as many valuables out of her as possible, and to make preparations for abandoning her if the worst came to the worst. The sailors accordingly occupied themselves in getting the cargo ashore over the lumps of stranded pack-ice and ice-floes.

The pitch of excitement at which we were naturally kept by the alarming character of the events in which we were forced to take such an active part, was by no means allayed by the weather. The brilliantly clear





THE TUNDRA  
Reindeer drinking at a stream

skies to which we had become accustomed changed to stormy clouds, followed by drizzling rain and mist. All nature seemed to share in our excitement. The revolution in the ice took place to the accompaniment of a perfect babel of birds. Above our heads we continually heard the *gag, gag* of Geese and the harsh bark of Swans, as flock after flock hurried past us to the Tundra. Wherever there was a little open water between the ice-floes and pack-ice, crowds of Gulls were fishing as if they had not had a meal for a week, and their derisive laugh, as they quarrelled over their prey, seemed to mock our misfortunes, while ever and anon the wild weird cries of the Black-throated and Red-throated Divers, like the distant scream of tortured children, came from the creek opposite. A few flocks of Wild Ducks also passed us, and along the shore small birds flitted from bush to bush in hitherto unknown profusion . . .

The ice remained quiet until about midnight, when an enormous pressure from above came on somewhat suddenly. It had apparently broken up the great field of ice to the north of the Koo-ray'-i-ka, but not to an extent sufficient to relieve the whole of the pressure. The water in the Koo-ray'-i-ka once more rose rapidly. The immense field of pack-ice began to move up-stream at the rate of five or six knots an hour. The *Thames* was soon afloat again, and driven with the ice up the river, she was knocked and bumped along the rocky shore, and her stern-post was twisted to such an extent, that she began to make water rapidly. At nine o'clock on Sunday, the 3rd of June, all hands left her, and stood watching on the steep bank. The stream rose and fell during the day, the current sometimes standing, some-

times becoming very rapid, the unfortunate ship being occasionally afloat, but generally aground. At night the stern-post seemed to have come back to its place, the undaunted Captain, with part of his faint-hearted crew, went on board, and the pumps reduced the water in the hold. The chances were ten to one that she was a hopeless wreck, but still the sailors struggled on to the last. The marvel was, where all the ice that had gone up the Koo-ray'-i-ka could possibly be stowed. I calculated that at least 50,000 acres of ice had passed the ship.

Late on the night of Monday, the 4th of June, the ice on the Koo-ray'-i-ka almost entirely cleared away. Steam was got up, and by the help of ropes ashore, the *Thames* was steered into the little creek below the house, where it had been the original intention of the Captain to have waited in safety the passing away of the ice. The season had been so severe, that the snow, which ought to have melted and swollen the river before the breaking-up of the ice, still remained upon the land. The consequence was, that when the great revolution commenced, the entrance to the creek was high and dry. The *Thames* entered the creek at two o'clock in the morning. By noon the water had sunk five or six feet, and the vessel lay on her side, with her bow at least three feet aground. These sudden falls in the level of the water were no doubt caused by the breaking-up of the ice lower down the river, which dammed it up until the accumulated pressure from behind became irresistible. Some idea of what this pressure must have been may be realised by the fact, that a part of the river a thousand miles long, beginning with a width of two miles, and ending with a width of six miles, covered over

with three feet of ice, upon which was lying six feet of snow, was broken up at the rate of a hundred miles a day. Many obstacles would cause a temporary stoppage in the break-up of the ice ; a sudden bend in the river, a group of islands or a narrower place where the ice might jam. But the pressure from behind was an ever-increasing one. Although the river frequently fell for a few hours, it was constantly rising on an average, and in ten days the rise, where we were stationed, was seventy feet. Such a display of irresistible power dwarfs Niagara into comparative insignificance. On several occasions we stood on the banks of the river for hours, transfixed with astonishment, staring aghast at icebergs, twenty to thirty feet thick, driven down the river at a speed of from ten to twenty miles an hour.

✓ The battle of the Yen-e-say' raged for about a fortnight, during which the Koo-ray'-i-ka alternately rose and fell. Thousands of acres of ice were marched upstream for some hours, then the tide turned and they were marched back again. This great annual battle between summer and winter is the great event of the year in these regions, like the rising of the Nile in Egypt. Summer, in league with the sun, fights winter and the north wind, and is hopelessly beaten, until she forms an alliance with the south wind, before whose blast the armies of winter vanish into thin water, and retreat to the pole. It was a wonderful sight to watch these armies alternately advancing and retreating. Sometimes the pack-ice and floes were jammed so tightly together that it looked as though one might scramble over them to the opposite shore. At other times there was much open water, and the icebergs

'calved' as they went along, with much commotion and splashing that might be heard half a mile off. No doubt it is the grounding of the icebergs which causes this operation to take place. These icebergs are formed of layers of ice, piled one on the top of the other, and imperfectly frozen together. In passing along, the bottom layer grounds, but the velocity at which the enormous mass is going will not allow it to stop. It passes on, leaving part of the bottom layer behind. The moment it has passed, the piece left behind rises to the surface like a whale coming up to breathe. Some of the 'calves' must have come up from a considerable depth. They rose out of the water with a huge splash, and rocked about for some time, before they settled down to their floating level.

At last the final march past of the beaten winter forces in their fourteen days' battle, took place, and for seven days more the ragtag and bobtail of the great Arctic army came straggling down the Koo-ray'-i-ka—worn and weather-beaten little icebergs, dirty ice-floes, that looked like floating mud banks, and straggling pack-ice in the last stages of consumption. Winter was finally vanquished for the year, and the fragments of his beaten army were compelled to retreat to the triumphant music of thousands of song-birds, and amidst the waving of green leaves, and the illumination of gay flowers of every hue.

This sudden change, in the short space of a fortnight, from midwinter to midsummer can scarcely, by courtesy, be called spring. It is a revolution of nature, and on a scale so imposing, that the most prosaic of observers cannot witness it without feeling its sublimity. Looked at in a purely scientific point of view, the lesson it

impresses upon the mind is exactly the opposite of that intended to be conveyed by the old fable of the traveller whose cloak the wind and the sun alternately try to steal from him. In these Arctic regions the sun seems to be almost powerless. The white snow seems to be an invulnerable shield, against which the sun-darts glance harmless, reflected back into the air. On the contrary, the south wind seems all-powerful. In spite of mist and cloud, the snow melts before it like butter upon hot toast, and winter tumbles down like a pack of cards.

HENRY SEEBOHM, *Siberia in Asia.*

By kind permission of Sir John Murray.

## CANOEING ON CANADIAN RIVERS

THE days that now commenced to pass were filled from dawn to dark with moments of keenest enjoyment, everything was new and strange, and each hour brought with it some fresh surprise of Indian skill or Indian scenery. The sun would be just tipping the western shores with his first rays when the canoe would be lifted from its ledge of rock and laid gently on the water; then the blankets and kettles, the provisions and the guns would be placed in it, and four Indians would take their seats, while one remained on the shore to steady the bark upon the water and keep its sides from contact with the rock; then when I had taken my place in the centre, the outside man would spring gently in, and we would glide away from the rocky resting-place. To tell the mere work of each day is no difficult matter: start at five o'clock a.m., halt for breakfast at seven o'clock, off again at eight, halt at one o'clock for dinner, away at two o'clock, paddle until sunset at 7.30;



that was the work of each day. But how shall I attempt to fill in the details of scene and circumstance between these rough outlines of time and toil, for almost at every hour of the long summer day the great Winnipeg revealed some new phase of beauty and of peril, some changing scene of lonely grandeur? I have already stated that the river in its course from the Lake of the Woods to Lake Winnipeg, 160 miles, makes a descent of 360 feet. The descent is effected not by a continuous decline, but by a series of terraces at various distances from each other; in other words, the river forms innumerable lakes and wide expanding reaches bound together by rapids and perpendicular falls of varying altitude; thus when the *voyageur* has lifted his canoe from the foot of the Silver Falls and launched again above the head of that rapid, he will have surmounted two-and-twenty feet of the ascent; again, the dreaded Seven Portages will give him a total rise of sixty feet in a distance of three miles. (How cold does the bare narration of these facts appear beside their actual realisation in a small canoe manned by Indians!) Let us see if we can picture one of these many scenes. There sounds ahead a roar of falling water, and we see, upon rounding some pine-clad island or ledge of rock, a tumbling mass of foam and spray studded with projecting rocks and flanked by dark wooded shores; above we can see nothing, but below the waters, maddened by their wild rush amidst the rocks, surge and leap in angry whirlpools. It is as wild a scene of crag and wood and water as the eye can gaze upon, but we look upon it not for its beauty, because there is no time for that, but because it is an enemy that must be conquered. Now mark how these Indians

steal upon this enemy before he is aware of it. The immense volume of water, escaping from the eddies and whirlpools at the foot of the fall, rushes on in a majestic sweep into calmer water ; this produces along the shores of the river a counter or back-current which flows up sometimes close to the foot of the fall ; along this back-water the canoe is carefully steered, being often not six feet from the opposing rush in the central river, but the back-current in turn ends in a whirlpool, and the canoe, if it followed this back-current, would inevitably end in the same place ; for a minute there is no paddling, the bow paddle and the steersman alone keeping the boat in the proper direction as she drifts rapidly up the current. Amongst the crew not a word is spoken, but every man knows what he has to do and will be ready when the moment comes ; and now the moment has come, for on one side there foams along a mad surge of water, and on the other the angry whirlpool twists and turns in smooth green hollowing curves round an axis of air, whirling round it with a strength that would snap our birch bark into fragments and suck us down into great depths below. All that can be gained by the back-current has been gained, and now it is time to quit it ; but where ? for there is often only the choice of the whirlpool or the central river. Just on the very edge of the eddy there is one loud shout given by the bow paddle, and the canoe shoots full into the centre of the boiling flood, driven by the united strength of the entire crew—the men work for their very lives, and the boat breasts across the river with her head turned full toward the falls ; the waters foam and dash about her, the waves leap high over the gunwale, the Indians shout as they dip their paddles like lightning



‘A tumbling mass of foam and spray . . . flanked by dark wooded shores’

Red Indian Falls, Newfoundland

into the foam, and the stranger to such a scene holds his breath amidst this war of man against nature. Ha ! the struggle is useless, they cannot force her against such a torrent, we are close to the rocks and the foam ; but see, she is driven down by the current in spite of those wild fast strokes. The dead strength of such a rushing flood must prevail. Yes, it is true, the canoe has been driven back ; but behold, almost in a second the whole thing is done—we float suddenly beneath a little rocky isle on the foot of the cataract. We have crossed the river in the face of the fall, and the portage-landing is over this rock, while three yards out on either side the torrent foams its headlong course. Of the skill necessary to perform such things it is useless to speak. A single false stroke, and the whole thing would have failed ; driven headlong down the torrent, another attempt would have to be made to gain this rock-protected spot, but now we lie secure here ; spray all round us, for the rush of the river is on either side and you can touch it with an outstretched paddle. The Indians rest on their paddles and laugh ; their long hair has escaped from its fastening through their exertion, and they retie it while they rest. One is already standing upon the wet slippery rock holding the canoe in its place, then the others get out. The freight is carried up piece by piece and deposited on the flat surface some ten feet above ; that done the canoe is lifted out very gently, for a single blow against this hard granite boulder would shiver and splinter the frail birch-bark covering ; they raise her very carefully up the steep face of the cliff and rest again on the top. What a view there is from this coign of vantage ! We are on the lip of the fall, on each side it makes its plunge,

and below we mark at leisure the torrent we have just braved ; above it is smooth water, and away ahead we see the foam of another rapid. The rock on which we stand has been worn smooth by the washing of the water during countless ages, and from a cleft or fissure there springs a pine-tree or a rustling aspen. We have crossed the Petit Roches, and our course is onward still.

GENERAL SIR W. F. BUTLER, *The Great Lone Land*.

## HECLA AND SKAPTA JOKUL

IN appearance Hecla differs very little from the innumerable other volcanic hills with which the island is studded. Its cone consists of a pyramid of stone and scoriae, rising to the height of about five thousand feet, and welded together by bands of molten matter which have issued from its sides. From A.D. 1004 to 1766 there have been twenty-three eruptions, occurring at intervals which have varied in duration from six to seventy-six years. The one of 1766 was remarkably violent. It commenced on the 5th of April by the appearance of a huge pillar of black sand mounting slowly into the heavens, accompanied by subterranean thunders and all the other symptoms which precede volcanic disturbances. Then a coronet of flame encircled the crater ; masses of red rock, pumice, and magnetic stones were flung out with tremendous violence to an incredible distance, and in such continuous multitudes as to resemble a swarm of bees clustering over the mountain. One boulder of pumice six feet in circumference was pitched twenty miles away ; another of magnetic iron fell at a distance of fifteen.

scoriae] lava fragments.

The surface of the earth was covered, for a circuit of one hundred and fifty miles, with a layer of sand four inches deep; the air was so darkened by it, that, at a place one hundred and forty miles off, white paper held up at a little distance could not be distinguished from black. The fishermen could not put to sea on account of the darkness, and the inhabitants of the Orkney islands were frightened out of their senses by showers of what they thought must be black snow. On the 9th of April the lava began to overflow, and ran for five miles in a south-westerly direction, whilst some days later—in order that no element might be wanting to mingle in this devil's charivari—a vast column of water, like Robin Hood's second arrow, split up through the cinder pillar to the height of several hundred feet; the horror of the spectacle being further enhanced by an accompaniment of subterranean cannonading and dire reports, heard at a distance of fifty miles.

Striking as all this must have been, it sinks into comparative tameness and insignificance beside the infinitely more terrible phenomena<sup>em</sup> which attended the eruption of another volcano, called Skapta Jokul.

Of all countries in Europe, Iceland is the one which has been the most minutely mapped, not even excepting the ordnance survey of Ireland. The Danish Government seem to have had a hobby about it, and the result has been a chart so beautifully executed, that every little crevice, each mountain torrent, each flood of lava, is laid down with an accuracy perfectly astonishing. One huge blank, however, in the south-west corner of this map of Iceland, mars the integrity of its

charivari] hubbub. *9 m. 1/2 m. 1/2 m.*

Robin Hood's second arrow] See *Ivanhoe*, ch. xiii.



almost microscopic delineations. To every other part of the island the engineer has succeeded in penetrating ; one vast space alone of about four hundred square miles has defied his investigation. Over the area occupied by the Skapta Jokul, amid its mountain-cradled fields of snow and icy ridges, no human foot has ever wandered. Yet it is from the bosom of this desert district that has descended the most frightful visitation ever known to have desolated the island.

This event occurred in the year 1783. The preceding winter and spring had been unusually mild. Toward the end of May, a light bluish fog began to float along the confines of the untrodden tracts of Skapta, accompanied in the beginning of June by a great trembling of the earth. On the 8th of that month immense pillars of smoke collected over the hill country towards the north, and coming down against the wind in a southerly direction, enveloped the whole district of Sida in darkness. A whirlwind of ashes then swept over the face of the country, and on the 10th innumerable fire-spouts were seen leaping and flaring amid the icy hollows of the mountain, while the river Skapta, one of the largest in the island, having first rolled down to the plain a vast volume of fetid waters mixed with sand, suddenly disappeared.

Two days afterwards a stream of lava, issuing from sources to which no one has ever been able to penetrate, came sliding down the bed of the dried-up river, and in a little time—though the channel was six hundred feet deep and two hundred broad—the glowing deluge overflowed its banks, crossed the low country of Medalland, ripping the turf up before it like a tablecloth, and poured into a great lake, whose affrighted

waters flew hissing and screaming into the air at the approach of the fiery intruder. Within a few more days the basin of the lake itself was completely filled, and having separated into two streams, the unexhausted torrent again recommenced its march ; in one direction overflowing some ancient lava-fields—in the other, re-entering the channel of the Skapta and leaping down the lofty cataract of Stapafoss. But this was not all ; while one lava flood had chosen the Skapta for its bed, another, descending in a different direction, was working like ruin within and on either side of the banks of the Hverfisfliot, rushing into the plain, by all accounts, with even greater fury and velocity. Whether the two issued from the same crater it is impossible to say, as the sources of both were far away within the heart of the unapproachable desert, and even the extent of the lava-flow can only be measured from the spot where it entered the inhabited districts. The stream which flowed down Skapta is calculated to be about fifty miles in length by twelve or fifteen at its greatest breadth ; that which rolled down the Hverfisfliot, at forty miles in length by seven in breadth. Where it was imprisoned, between the high banks of Skapta, the lava is five or six hundred feet thick ; but as soon as it spread out into the plain its depth never exceeded one hundred feet. The eruption of sand, ashes, pumice, and lava continued till the end of August, when the Plutonic drama concluded with a violent earthquake.

For a whole year a canopy of cinder-laden cloud

Plutonic] In Greek mythology Pluto is the god of the underworld. In geology the Plutonic theory ascribed most surface phenomena to the action of the earth's internal heat.

hung over the island. Sand and ashes irretrievably overwhelmed thousands of acres of fertile pasturage. The Faroe islands, the Shetlands, and the Orkneys were deluged with volcanic dust, which perceptibly contaminated even the pure skies of England and Holland. Mephitic vapours tainted the atmosphere of the entire island; even the grass, which no cinder-rain had stifled, completely withered up; the fish perished in the poisoned sea. A murrain broke out among the cattle, and a disease resembling scurvy attacked the inhabitants themselves. Stephenson has calculated that 9,000 men, 28,000 horses, 11,000 cattle, 190,000 sheep, died from the effects of this one eruption. The most moderate calculation puts the number of human deaths at upwards of 1,300; and of cattle, &c., at about 156,000.

LORD DUFFERIN, *Letters from High Latitudes.*

## VESUVIUS

ABOUT a fortnight ago I left Rome, and Mary and Claire followed in three days, for it was necessary to procure lodgings here without alighting at an inn. From my peculiar mode of travelling I saw little of the country, but could just observe that the wild beauty of the scenery and the barbarous ferocity of the inhabitants progressively increased. On entering Naples, the first circumstance that engaged my attention was an assassination. A youth ran out of a shop, pursued by a woman with a bludgeon, and a man armed with a knife. The man overtook him, and with one blow in the neck laid him dead in the road. On my expressing the emotions of horror and indignation which I felt, a

Calabrian priest, who travelled with me, laughed heartily, and attempted to quiz me, as what the English call a flat. I never felt such an inclination to beat any one. Heaven knows I have little power, but he saw that I looked extremely displeased, and was silent. This same man, a fellow of gigantic strength and stature, had expressed the most frantic terror of robbers on the road : he cried at the sight of my pistol, and it had been with great difficulty that the joint exertions of myself and the vetturino had quieted his hysterics.

But external nature in these delightful regions contrasts with and compensates for the deformity and degradation of humanity. We have a lodging divided from the sea by the royal gardens, and from our windows we see perpetually the blue waters of the bay, forever changing, yet forever the same, and encompassed by the mountainous island of Capreae, the lofty peaks which overhang Salerno, and the woody hill of Posilipo, whose promontories hide from us Misenum and the lofty isle Inarime, which, with its divided summit, forms the opposite horn of the bay. From the pleasant walks of the garden we see Vesuvius ; a smoke by day and a fire by night is seen upon its summit, and the glassy sea often reflects its light or shadow. The climate is delicious. We sit without a fire, with the windows open, and have almost all the productions of an English summer. The weather is usually like what Wordsworth calls ‘ the first fine day of March ’ ; sometimes very much warmer, though perhaps it wants that ‘ each minute sweeter than before ’, which gives an

vetturino] driver.

‘ the first fine day of March ’] From *To my Sister*. ‘ Fine ’ should be ‘ mild.’

intoxicating sweetness to the awakening of the earth from its winter's sleep in England. We have made two excursions, one to Baiae and one to Vesuvius, and we propose to visit, successively, the islands, Paestum, Pompeii, and Beneventum.

We set off an hour after sunrise one radiant morning in a little boat ; there was not a cloud in the sky, nor a wave upon the sea, which was so translucent that you could see the hollow caverns clothed with the glaucous sea-moss, and the leaves and branches of those delicate weeds that pave the unequal bottom of the water. As noon approached, the heat, and especially the light, became intense. We passed Posilipo, and came first to the eastern point of the bay of Puzzoli, which is within the great bay of Naples, and which again incloses that of Baiae. Here are lofty rocks and craggy islets, with arches and portals of precipice standing in the sea, and enormous caverns, which echoed faintly with the murmur of the languid tide. This is called La Scuola di Virgilio. We then went directly across to the promontory of Misenum, leaving the precipitous island of Nesida on the right. Here we were conducted to see the Mare Morto, and the Elysian fields ; the spot on which Virgil places the scenery of the Sixth *Aeneid*. Though extremely beautiful, as a lake, and woody hills, and this divine sky must make it, I confess my disappointment. The guide showed us an antique cemetery, where the niches used for placing the cinerary urns of the dead yet remain. We then coasted the Bay of Baiae to the left, in which we saw many picturesque and interesting ruins ; but I have to remark that we never disembarked but we were disappointed—while from the boat the effect of the scenery was

inexpressibly delightful. The colours of the water and the air breathe over all things here the radiance of their own beauty. After passing the Bay of Baiae, and observing the ruins of its antique grandeur standing like rocks in the transparent sea under our boat, we landed to visit lake Avernus. We passed through the cavern of the Sibyl (not Virgil's Sibyl) which pierces one of the hills which circumscribe the lake, and came to a calm and lovely basin of water, surrounded by dark woody hills, and profoundly solitary. Some vast ruins of the temple of Pluto stand on a lawn hill on one side of it, and are reflected in its windless mirror. It is far more beautiful than the Elysian fields—but there are all the materials for beauty in the latter, and the Avernus was once a chasm of deadly and pestilential vapours. About half a mile from Avernus, a high hill, called Monte Novo, was thrown up by volcanic fire.

Passing onward we came to Pozzoli, the ancient Dicaearchæa, where there are the columns remaining of a temple to Serapis, and the wreck of an enormous amphitheatre, changed, like the Coliseum, into a natural hill of the overteeming vegetation. Here also is the Solfatara, of which there is a poetical description in the *Civil War* of Petronius, beginning—‘Est locus,’ and in which the verses of the poet are infinitely finer than what he describes, for it is not a very curious place. After seeing these things we returned by moonlight to Naples in our boat. What colours there were in the sky, what radiance in the evening star, and how the moon was encompassed by a light unknown to our regions!

Our next excursion was to Vesuvius. We went to Resina in a carriage, where Mary and I mounted mules,

Virgil's Sibyl] the priestess in the Sixth *Aeneid*.





VESUVIUS AND THE BAY OF NAPLES

From Virgil's Tomb

and Claire was carried in a chair on the shoulders of four men, much like a Member of Parliament after he has gained his election, and looking, with less reason, quite as frightened. So we arrived at the hermitage of San Salvador, where an old hermit, belted with rope, set forth the plates for our refreshment.

Vesuvius is, after the glaciers, the most impressive exhibition of the energies of nature I ever saw. It has not the immeasurable greatness, the overpowering magnificence, nor, above all, the radiant beauty of the glaciers ; but it has all their character of tremendous and irresistible strength. From Resina to the hermitage you wind up the mountain, and cross a vast stream of hardened lava, which is an actual image of the waves of the sea, changed into hard black stone by enchantment. The lines of the boiling flood seem to hang in the air, and it is difficult to believe that the billows which seem hurrying down upon you are not actually in motion. This plain was once a sea of liquid fire. From the hermitage we crossed another vast stream of lava, and then went on foot up the cone—this is the only part of the ascent in which there is any difficulty, and that difficulty has been much exaggerated. It is composed of rocks of lava, and declivities of ashes ; by ascending the former and descending the latter, there is very little fatigue. On the summit is a kind of irregular plain, the most horrible chaos that can be imagined ; riven into ghastly chasms, and heaped up with tumuli of great stones and cinders, and enormous rocks blackened and calcined, which had been thrown from the volcano upon one another in terrible confusion. In the midst stands the conical hill from which volumes of smoke, and the fountains of liquid fire, are rolled

forth forever. The mountain is at present in a slight state of eruption ; and a thick heavy white smoke is perpetually rolled out, interrupted by enormous columns of an impenetrable black bituminous vapour, which is hurled up, fold after fold, into the sky with a deep hollow sound, and fiery stones are rained down from its darkness, and a black shower of ashes fell even where we sat. The lava, like the glacier, creeps on perpetually, with a crackling sound as of suppressed fire. There are several springs of lava ; and in one place it rushes precipitously over a high crag, rolling down the half-molten rocks and its own overhanging waves ; a cataract of quivering fire. We approached the extremity of one of the rivers of lava ; it is about twenty feet in breadth and ten in height ; and as the inclined plane was not rapid, its motion was very slow. We saw the masses of its dark exterior surface detach themselves as it moved, and betray the depth of the liquid flame. In the day the fire is but slightly seen ; you only observe a tremulous motion in the air, and streams and fountains of white sulphurous smoke.

At length we saw the sun sink between Capreae and Inarime, and, as the darkness increased, the effect of the fire became more beautiful. We were, as it were, surrounded by streams and cataracts of the red and radiant fire ; and in the midst, from the column of bituminous smoke shot up into the air, fell the vast masses of rock, white with the light of their intense heat, leaving behind them through the dark vapour trains of splendour. We descended by torch-light, and I should have enjoyed the scenery on my return, but they conducted me, I know not how, to the hermitage in a state of intense bodily suffering, the worst effect of

which was spoiling the pleasure of Mary and Claire. Our guides on the occasion were complete savages. You have no idea of the horrible cries which they suddenly utter, no one knows why ; the clamour, the vociferation, the tumult. Claire in her palanquin suffered most from it ; and when I had gone on before, they threatened to leave her in the middle of the road, which they would have done had not my Italian servant promised them a beating, after which they became quiet. Nothing, however, can be more picturesque than the gestures and the physiognomies of these savage people. And when, in the darkness of night, they unexpectedly begin to sing in chorus some fragments of their wild but sweet national music, the effect is exceedingly fine.

Since I wrote this, I have seen the museum of this city. Such statues ! There is a Venus ; an ideal shape of the most winning loveliness. A Bacchus, more sublime than any living being. There are multitudes of wonderfully fine statues found in Herculaneum and Pompeii. We are going to see Pompeii the first day that the sea is waveless. Herculaneum is almost filled up ; no more excavations are made ; the king bought the ground and built a palace upon it.

PERCY BYSSHE SHELLEY, *Letters*.

' ITALY, MY ITALY ! '

WHAT I love best in all the world  
Is a castle, precipice-encurled,  
In a gash of the wind-grieved Apennine ;  
Or look for me, old fellow of mine,  
(If I get my head from out the mouth

O’ the grave, and loose my spirit’s bands,  
 And come again to the land of lands)—  
 In a sea-side house to the farther South,  
 Where the baked cicala dies of drouth,  
 And one sharp tree—’tis a cypress—stands,  
 By the many hundred years red-rusted,  
 Rough iron-spiked, ripe fruit-o’ercrusted,  
 My sentinel to guard the sands  
 To the water’s edge. For, what expands  
 Before the house, but the great opaque  
 Blue breadth of sea without a break ?  
 While, in the house, for ever crumbles  
 Some fragment of the frescoed walls,  
 From blisters where a scorpion sprawls.  
 A girl bare-footed brings, and tumbles  
 Down on the pavement, green-flesh melons,  
 And says there’s news to-day—the king  
 Was shot at, touched in the liver-wing,  
 Goes with his Bourbon arm in a sling :  
 —She hopes they have not caught the felons.  
 Italy, my Italy !

Queen Mary’s saying serves for me—  
 (When fortune’s malice  
 Lost her—Calais)—

Open my heart and you will see  
 Graved inside of it, ‘ Italy.’  
 Such lovers old are I and she :  
 So it always was, so shall ever be !

ROBERT BROWNING, *De Gustibus*.

his Bourbon arm] When Browning wrote this, the south of Italy still groaned under the tyranny of the Kings of Naples, who were Spanish Bourbons by descent.

## BURKE'S VISION OF INDIA

HIS knowledge of India was such as few, even of those Europeans who have passed many years in that country, have attained, and such as certainly was never attained by any public man who had not quitted Europe. He had studied the history, the laws, and the usages of the East with an industry such as is seldom found united to so much genius and so much sensibility. Others have perhaps been equally laborious, and have collected an equal mass of materials. But the manner in which Burke brought his higher powers of intellect to work on statements of facts, and on tables of figures, was peculiar to himself. In every part of those huge bales of Indian information which repelled almost all other readers, his mind, at once philosophical and poetical, found something to instruct or to delight. His reason analysed and digested those vast and shapeless masses ; his imagination animated and coloured them. Out of darkness, and dulness, and confusion, he formed a multitude of ingenious theories and vivid pictures. He had, in the highest degree, that noble faculty whereby man is able to live in the past and in the future, in the distant and in the unreal. India and its inhabitants were not to him, as to most Englishmen, mere names and abstractions, but a real country and a real people. The burning sun, the strange vegetation of the palm and the cocoa tree, the rice-field, the tank, the huge trees, older than the Mogul empire, under which the village crowds assemble, the thatched roof of the peasant's hut, the rich tracery of the mosque where the imaum prays with his face to Mecca, the drums, and  
 imaum] Mohammedan priest.





A BEAUTIFUL BUDDHIST MONUMENT IN INDIA

The North Gate of the Great Stupa at Sanchi, built about 150 B.C.

banners, and gaudy idols, the devotee swinging in the air, the graceful maiden, with the pitcher on her head, descending the steps to the riverside, the black faces, the long beards, the yellow streaks of sect, the turbans and the flowing robes, the spears and the silver maces, the elephants with their canopies of state, the gorgeous palanquin of the prince, and the close litter of the noble lady, all these things were to him as the objects amidst which his own life had been passed, as the objects which lay on the road between Beaconsfield and St. James's Street. All India was present to the eye of his mind, from the halls where suitors laid gold and perfumes at the feet of sovereigns to the wild moor where the gipsy camp was pitched, from the bazar, humming like a beehive with the crowd of buyers and sellers, to the jungle where the lonely courier shakes his bunch of iron rings to scare away the hyenas. He had just as lively an idea of the insurrection at Benares as of Lord George Gordon's riots, and of the execution of Nuncomar as of the execution of Dr. Dodd. Oppression in Bengal was to him the same thing as oppression in the streets of London.

LORD MACAULAY, *Warren Hastings*.

## ARABIA

FAR are the shades of Arabia,  
 Where the Princes ride at noon,  
 'Mid the verdurous vales and thickets,  
 Under the ghost of the moon ;  
 And so dark is that vaulted purple  
 Flowers in the forest rise  
 And toss into blossom 'gainst the phantom stars  
 Pale in the noonday skies.

sect] here = caste.

Beaconsfield] In the Chilterns. Burke lived there.

Sweet is the music of Arabia

In my heart, when out of dreams  
I still in the thin clear murk of dawn

Descry her gliding streams ;

Hear her strange lutes on the green banks

Ring loud with the grief and delight  
Of the dim-silked, dark-haired Musicians

In the brooding silence of night.

They haunt me—her lutes and her forests ;

No beauty on earth I see

But shadowed with that dream recalls

Her loveliness to me :

Still eyes look coldly upon me,

Cold voices whisper and say—

‘ He is crazed with the spell of far Arabia,

They have stolen his wits away.’

WALTER DE LA MARE.

By kind permission of the author.

## THE MONARCH OF THE DESERT

As long as you are journeying in the interior of the Desert you have no particular point to make for as your resting-place. The endless sands yield nothing but small stunted shrubs ; even these fail after the first two or three days, and from that time you pass over broad plains—you pass over newly reared hills—you pass through valleys dug out by the last week's storm, and the hills and the valleys are sand, sand, sand, still sand, and only sand, and sand, and sand again. The earth is so samely, that your eyes turn towards heaven—towards heaven, I mean, in sense of sky.

You look to the Sun, for he is your task-master, and by him you know the measure of the work that you have done, and the measure of the work that remains for you to do. He comes when you strike your tent in the early morning, and then, for the first hour of the day, as you move forward on your camel, he stands at your near side, and makes you know that the whole day's toil is before you ; then for a while, and a long while, you see him no more, for you are veiled and shrouded, and dare not look upon the greatness of his glory, but you know where he strides over head, by the touch of his flaming sword. No words are spoken, but your Arabs moan, your camels sigh, your skin glows, your shoulders ache, and for sights you see the pattern and the web of the silk that veils your eyes, and the glare of the outer light. Time labours on—your skin glows, your shoulders ache, your Arabs moan, your camels sigh, and you see the same pattern in the silk, and the same glare of light beyond ; but conquering Time marches on, and by and by the descending sun has compassed the heaven, and now softly touches your right arm, and throws your lank shadow over the sand right along on the way for Persia. Then again you look upon his face, for his power is all veiled in his beauty, and the redness of flames has become the redness of roses ; the fair, wavy cloud that fled in the morning now comes to his sight once more—comes blushing, yet still comes on—comes burning with blushes, yet comes and clings to his side.

ALEXANDER WILLIAM KINGLAKE, *Eothen*.

## THE DESERT DAY

Now longwhile our black booths had been built upon the sandy stretches, lying before the swelling white Nefûd side : the lofty coast of Irnân in front, whose cragged breaches, where is any footing for small herbs nourished of this barren atmosphere, are the harbour of wild goats, which never drink. The summer's night at end, the sun stands up as a crown of hostile flames from that huge covert of inhospitable sandstone bergs ; the desert day dawns not little and little, but it is noon-tide in an hour. The sun, entering as a tyrant upon the waste landscape, darts upon us a torment of fiery beams, not to be remitted till the far-off evening. No matins here of birds ; not a rock partridge-cock, calling with blithesome chuckle over the extreme waterless desolation. Grave is that giddy heat upon the crown of the head ; the ears tingle with a flickering shrillness, a subtle crepitation it seems, in the glassiness of this sun-stricken nature : the hot sand-blink is in the eyes, and there is little refreshment to find in the tent's shelter ; the worsted booths leak to this fiery rain of sunny light. Mountains looming like dry bones through the thin air, stand far around about us ; the savage flank of Ybba Moghrair, the high spire and ruinous stacks of el-Jebâl, Chebâd, the coast of Helwân ! Herds of the weak nomad camels waver dispersedly, seeking pasture in the midst of this hollow fainting country, where but lately the swarming locusts have fretted every green thing. This silent air burning about us, we endure breathless till the assr : when the  
 assr] afternoon.

dazing Arabs in the tents revive after their heavy hours. The lingering day draws down to the sunsetting ; the herdsmen, weary of the sun, come again with the cattle, to taste in their menzils the first sweetness of mirth and repose. The day is done, and there rises the nightly freshness of this purest mountain air : and then to the cheerful song and the cup at the common fire. The moon rises ruddy from that solemn obscurity of jebel like a mighty beacon : and the morrow will be as this day, days deadly drowned in the sun of the summer wilderness.

CHARLES MONTAGU DOUGHTY,  
*Travels in Arabia Deserta.*

By kind permission of Messrs. Jonathan Cape.

## SAILING ON THE MAP

NOR are thy daily and devout affairs  
Attended with those desperate cares  
The industrious merchant has, who, for to find  
Gold, runneth to the Western Ind

And back again ; tortured with fears, doth fly,  
Untaught to suffer poverty.  
But thou at home, blest with securest ease,  
Sitt'st, and believ'st that there be seas

And watery dangers, while thy whiter hap  
But sees these things within thy map ;  
And, viewing them with a more safe survey,  
Mak'st easy fear unto thee say,

menzils] camping-grounds.  
whiter hap] better luck.

jebel] mountain.



' A heart thrice walled with oak and brass that man  
Had, first durst plough the ocean.'  
But thou at home, without or tide or gale,  
Canst in thy map securely sail,

Seeing those painted countries, and so guess  
By those fine shades their substances ;  
And, from thy compass taking small advice,  
Buy'st travel at the lowest price.

ROBERT HERRICK.

### MAP-READING

As in the reading of printed words or a musical score, precision and speed in the reading of maps can pretty rapidly be carried further and further. Soon the map is read, as it were, not word by word, but phrase by phrase ; the meaning of whole passages of it leaps out ; you see, with something like the summary grasp your eye would get of the actual scene, the long façades of precipice and hanging glacier that there must be where the blue contour lines crowd up closely together right under a peak of twelve thousand feet, with a northern exposure, and also the vast, gently sloping expanses of snowfield below, where the lines flow out wider and wider apart, expressing broad shelves, and huge, shallow basins hoisted on upper floors of the mountain. A musician's mental ear, I suppose, can hear directly, when he reads a succession of notes on ruled paper, the rise and fall of an air, the jaunty lilt or triumphant rush or plaintive trail of its gait, its swelling loudness or

' A heart . . . ocean ' ] From Horace, *Odes*, I. iii. ll. 9-12.

shrunkén whisper. So the reader of maps is freed, before long, from the need to go through a conscious act of interpretation when gazing at the mapped contours of a mountain that he has never seen. He no longer has to tell himself, as he cons the endless lines : ' Where I see a succession of rising contour lines close together, and, just above them, a few lines further apart, and, above these, others close together again, it means that there is here a hollow in the mountain ' ; or ' where the curvilinear contours change their course and all stab inwards pointedly towards the heart of the hill, roughly parallel to each other, make an acute angle, and then come out again to resume their old direction, it means a deep, narrow glen or gully running up the hill-side.' He has no more need to do that than you or I have to worry over the spelling and syntax of Keats in the *Ode to Autumn*. The notation once learnt, the map conveys its own import with an immediateness and vivacity comparable with those of the score or the poem. Convexities and concavities of ground, the bluff, the defile, the long mounting bulge of a grassy ridge, the snuggling hollow within a mountain shaped like a horse-shoe—all come directly into your presence and offer you the spectacle of their high or low relief with a vivid sensuous sharpness.

Much enjoyment of these delights can generate in the mind a new power of topographic portraiture, a knack of forming circumstantially correct visions of large patches of the earth's surface. You learn, like a portrait-painter, to penetrate by the help of intuitive inference ; you get at one thing through another. You see on a good map the course of the Mersey—short, traversing a plain for more than the latter half of its

length ; but also, in its head streams of the Etherow and the Goyt, crossing rapid successions of contour lines in the Pennine moorlands of Longdendale and the Peak. You guess at once what the temper of such a river must be. For it is a very down-comer pipe, as a builder might say, in its upper course, to drain the steeper side of the much-drenched roof of the Pennine, from Buxton northward to somewhere near Oldham. Clearly a stream to be vexed with extravagant spates, swiftly rising and swiftly subsiding, before at last its pace wears itself out in the fat Cheshire flats, as the rushing and tearing Rhine of Bale slows down in level Holland. Then you examine the Mersey on your map, in the lowland reaches just after it works clear of the hills ; and, with a happy inward crow of satisfaction you see, if your map is a thoroughly good one, how the stream is flanked throughout the many miles from Stockport to Sale with enormous flood banks raised to guard the riverain farms from just that termagant fury that you had looked out for.

Every educated person knows, in a sense, how the surface of England is modelled—how the formative ridge of the Pennine is dropped half-way down the country southwards like the firmer cartilage in the flesh of a widening nose ; how the lateral bracket of the Lake hills is attached unsymmetrically to this central framework by the Shap bar, and so on. But few such persons conceive it with any imaginative energy or with the delight that such energy brings. The rest have the kind of knowledge that lies dead in the mind, as a classical education lies dead in the minds of most of those who have had it. It has to be raised from the dead by some evocatory miracle of appeal to

the sensuous imagination—the kind of imagination that rejoices to take up and carry on the work of a bodily sense at a point where bodily sense can go no further. The work is carried on, at the best, with so much of the eager immediacy of actual sight, or hearing, and so little of the dusty cloudiness of common abstract thought, that on a peak of the Alps you may obtain a sensation almost indistinguishable from seeing with the bodily eye the whole structure of the Apennines, the Lombard plain and the silted Venetian lagoon, laid out under your eye. Or from a bulge of high ground in our Midlands, where the Nen, the Welland and the Bristol Avon rise almost together, you may suddenly feel that you see the whole complex of English rivers as sharply clear as you may see the rummaging roots of a bulb grown in a clear glass full of water.

These delights if you would have,  
Come live with me and be my love.

Thus does the large-scale map woo the susceptible mind. Geography, in such a guise, is quite a different muse from the pedantic harri-dan who used to plague the spirit of youth with lists of chief towns, rivers and lakes, and statistics of leather, hardware and jute.

CHARLES EDWARD MONTAGUE, *The Right Place*.

By kind permission of the author and Messrs. Chatto & Windus.

## VII

### THE SPIDER

OF all the solitary insects I have ever remarked, the spider is the most sagacious ; and its actions to me, who have attentively considered them, seem almost to exceed belief. This insect is formed by nature for a state of war, not only upon other insects, but upon each other. For this state nature seems perfectly well to have formed it. Its head and breast are covered with a strong natural coat of mail, which is impenetrable to the attempts of every other insect, and its belly is enveloped in a soft pliant skin, which eludes the sting even of a wasp. Its legs are terminated by strong claws, not unlike those of a lobster, and their vast length, like spears, serves to keep every assailant at a distance.

Not worse furnished for observation than for an attack or a defence, it has several eyes, large, transparent, and covered with a horny substance, which, however, does not impede its vision. Besides this, it is furnished with a forceps above the mouth, which serves to kill or secure the prey already caught in its claws or its net.

Such are the implements of war with which the body is immediately furnished ; but its net to entangle the enemy seems what it chiefly trusts to, and what it takes most pains to render as complete as possible. Nature has furnished the body of this little creature with a glutinous liquid, which, proceeding from the anus, it spins into a thread, coarser or finer as it chooses to

contract or dilate its sphincter. In order to fix its thread when it begins to weave, it emits a small drop of its liquid against the wall, which, hardening by degrees, serves to hold the thread very firmly. Then receding from the first point, as it recedes the thread lengthens; and when the spider has come to the place where the other end of the thread should be fixed, gathering up with its claws the thread which would otherwise be too slack, it is stretched tightly, and fixed in the same manner to the wall as before.

In this manner it spins and fixes several threads parallel to each other, which, so to speak, serve as the warp to the intended web. To form the woof, it spins in the same manner its thread, transversely fixing one end to the first thread that was spun, and which is always the strongest of the whole web, and the other to the wall. All these threads, being newly spun, are glutinous, and therefore stick to each other wherever they happen to touch, and in those parts of the web most exposed to be torn, our natural artist strengthens them, by doubling the threads sometimes sixfold.

Thus far naturalists have gone in the description of this animal; what follows is the result of my own observation upon that species of the insect called a *House-Spider*. I perceived about four years ago, a large spider in one corner of my room, making its web; and though the maid frequently levelled her fatal broom against the labours of the little animal, I had the good fortune then to prevent its destruction; and I may say, it more than paid me by the entertainment it afforded.

In three days the web was, with incredible diligence, completed; nor could I avoid thinking that the insect

[sphincter] muscle round a tube.



seemed to exult in its new abode. It frequently traversed it round, examined the strength of every part of it, retired into its hole, and came out very frequently. The first enemy, however, it had to encounter, was another and a much larger spider, which, having no web of its own, and having probably exhausted all its stock in former labours of this kind, came to invade the property of its neighbour. Soon then a terrible encounter ensued, in which the invader seemed to have the victory, and the laborious spider was obliged to take refuge in its hole. Upon this I perceived the victor using every art to draw the enemy from his stronghold. He seemed to go off, but quickly returned ; and when he found all arts vain, began to demolish the new web without mercy. This brought on another battle, and, contrary to my expectations, the laborious spider became conqueror, and fairly killed his antagonist.

Now, then, in peaceable possession of what was justly its own, it waited three days with the utmost patience, repairing the breaches of its web, and taking no sustenance that I could perceive. At last, however, a large blue fly fell into the snare, and struggled hard to get loose. The spider gave it leave to entangle itself as much as possible, but it seemed to be too strong for the cobweb. I must own I was greatly surprised when I saw the spider immediately sally out, and in less than a minute weave a new net round its captive, by which the motion of its wings was stopped ; and when it was fairly hampered in this manner, it was seized, and dragged into the hole.

In this manner it lived, in a precarious state ; and nature seemed to have fitted it for such a life, for upon a single fly it subsisted for more than a week. I once put a wasp into the net ; but when the spider came out

in order to seize it as usual, upon perceiving what kind of an enemy it had to deal with, it instantly broke all the bands that held it fast, and contributed all that lay in its power to disengage so formidable an antagonist. When the wasp was at liberty, I expected the spider would have set about repairing the breaches that were made in its net, but those it seems were irreparable, wherefore the cobweb was now entirely forsaken, and a new one begun, which was completed in the usual time.

I had now a mind to try how many cobwebs a single spider could furnish ; wherefore I destroyed this, and the insect set about another. When I destroyed the other also, its whole stock seemed entirely exhausted, and it could spin no more. The arts it made use of to support itself, now deprived of its great means of subsistence, were indeed surprising. I have seen it roll up its legs like a ball, and lie motionless for hours together, but cautiously watching all the time ; when a fly happened to approach sufficiently near, it would dart out all at once, and often seize its prey.

Of this life, however, it soon began to grow weary, and resolved to invade the possession of some other spider, since it could not make a web of its own. It formed an attack upon a neighbouring fortification with great vigour, and at first was as vigorously repulsed. Not daunted, however, with one defeat, in this manner it continued to lay siege to another's web for three days, and, at length, having killed the defendant, actually took possession. When smaller flies happen to fall into the snare, the spider does not sally out at once, but very patiently waits till it is sure of them ; for, upon his immediately approaching, the terror of his appearance might give the captive strength sufficient to get loose.

The manner then is to wait patiently till, by ineffectual and impotent struggles, the captive has wasted all its strength, and then he becomes a certain and an easy conquest.

The insect I am now describing lived three years ; every year it changed its skin, and got a new set of legs. I have sometimes plucked off a leg, which grew again in two or three days. At first, it dreaded my approach to its web, but at last it became so familiar as to take a fly out of my hand, and upon my touching any part of the web, would immediately leave its hole, prepared either for a defence or an attack.

To complete this description, it may be observed, that the male spiders are much less than the female, and that the latter are oviparous. When they come to lay, they spread a part of their web under the eggs, and then roll them up carefully, as we roll up things in a cloth, and thus hatch them in their hole. If disturbed in their holes, they never attempt to escape without carrying this young brood in their forceps away with them, and thus frequently are sacrificed to their parental affection.

As soon as ever the young ones leave their artificial covering, they begin to spin, and almost sensibly seem to grow bigger. If they have the good fortune, when even but a day old, to catch a fly, they fall to with good appetites ; but they live sometimes three or four days without any sort of sustenance, and yet still continue to grow larger, so as every day to double their former size. As they grow old, however, they do not still continue to increase, but their legs only continue to grow longer ; and when a spider becomes entirely stiff with age, and unable to seize its prey, it dies at length of hunger.

oviparous] egg-laying.

OLIVER GOLDSMITH.

## DEVOTION OF WORKER BEES

THERE are numberless instances of the absolute attachment and devotion that the workers display towards their queen. Should disaster befall the little republic ; should the hive or the comb collapse ; should man prove ignorant or brutal ; should they suffer from famine, from cold or disease, and perish by thousands, it will still be almost invariably found that the queen will be safe and alive beneath the corpses of her faithful daughters. For they will protect her and help her to escape ; their bodies will provide both rampart and shelter ; for her will be the last drop of honey, the wholesomest food. And be the disaster never so great, the city of virgins will not lose heart so long as the queen be alive. Break their comb twenty times in succession, take twenty times from them their young and their food, you still shall never succeed in making them doubt of the future ; and though they be starving, and their number so small that it scarcely suffices to shield their mother from the enemy's gaze, they will set about to reorganize the laws of the colony, and to provide for what is most pressing ; they will distribute the work in accordance with the new necessities of this disastrous moment ; and thereupon will immediately reassume their labours with an ardour, a patience, a tenacity and intelligence not often to be found existing to such a degree in nature, true though it be that most of its creatures display more confidence and courage than man.

But the presence of the queen is not even essential for their discouragement to vanish and their love to endure. It is enough that she should have left, at the

moment of her death or departure, the very slenderest hope of descendants. 'We have seen a colony,' says Langstroth, one of the fathers of modern apiculture, 'that had not bees sufficient to cover a comb of three inches square, and yet endeavoured to rear a queen. For two whole weeks did they cherish their hope; finally, when their number was reduced by one half, their queen was born, but her wings were imperfect, and she was unable to fly. Impotent as she was, her bees did not treat her with the less respect. A week more, and there remained hardly a dozen bees; yet a few days and the queen had vanished, leaving a few wretched, inconsolable insects upon the combs.'

There is another instance, and one that reveals most palpably the utmost gesture of filial love and devotion. It arises from one of the extraordinary ordeals that our recent and tyrannical intervention inflicts on these hapless, unflinching heroines. I, in common with all amateur bee-keepers, have more than once had impregnated queens sent me from Italy; for the Italian species is more prolific, stronger, more active and gentler than our own. It is the custom to forward them in small, perforated boxes. In these some food is placed, and the queen enclosed, together with a certain number of workers, selected as far as possible from among the oldest bees in the hive. (The age of the bee can be readily told by its body, which gradually becomes more polished, thinner, and almost bald; and more particularly by the wings, which hard work uses and tears.) It is their mission to feed the queen during the journey, to tend her and guard her. I would frequently find, when the box arrived, that nearly every one of the workers was dead. On one

occasion, indeed, they had all perished of hunger ; but in this instance, as in all others, the queen was alive, unharmed, and full of vigour ; and the last of her companions had probably passed away in the act of presenting the last drop of honey she held in her sac to the queen, who was symbol of a life more precious, more vast, than her own.

MAURICE MAETERLINCK, *The Life of the Bee*

(tr. Alfred Sutro).

By kind permission of Messrs. Allen & Unwin.

### A DRUNKEN BEE

As I lay yonder in tall grass  
A drunken bumble bee went past  
Delirious with honey toddy.  
The golden sash about his body  
Scarce kept it in his swollen belly  
Distent with honeysuckle-jelly.  
Rose liquor and the sweet-pea wine  
Had fill'd his soul with song divine ;  
Deep had he drunk the warm night through,  
His hairy thighs were wet with dew.  
Full many an antic he had play'd  
While the world went round through sleep and shade.  
Oft had he lit with thirsty lip  
Some flower-cup's nectar'd sweets to sip,  
When on smooth petals he would slip,  
Or over tangled stamens trip,  
And, headlong in the pollen roll'd,  
Crawl out quite dusted o'er with gold ;  
Or else his heavy feet would stumble  
Against some bud, and down he'd tumble



Amongst the grass ; there lie and grumble  
In low, soft bass—poor maudlin bumble.

HENRY A. BEERS.

[Quoted in Whitman's *Specimen Days in America*.]

## SINGING CONTESTS

WHEN stridulating it appeared to be the ambition of every male grasshopper to get up as high as he could climb on the stiff blades and thin stalks of the grass ; and there, very conspicuous in his uniform green colour which in a strong sunlight looked like the green of verdigris, his translucent overwings glistening like a dragon-fly's wings, he would shrill and make the grass to which he was clinging tremble to his rapidly vibrating body. Then he would listen to the shrill response of some other singer not far off, and then sing and listen again, and yet again ; then all at once in a determined manner he would set out to find his rival, travelling high up through the grass, climbing stems and blades until they bent enough for him to grasp others and push on, reminding one of a squirrel progressing through the thin highest branches of a hazel copse. After covering the distance in this manner, with a few short pauses by the way to shrill back an answering challenge, he would find a suitable place near to the other, still in his place high up in the grass ; and then the two, a foot or so, sometimes three or four inches, apart, would begin a regular duet in sound at short range. Each takes his turn, and when one sings the other raises one of his forelegs to listen ; one may say that in lifting a leg he

stridulating] making a shrill sound by rubbing hard parts of the body together.

‘cocks an ear.’ The attitude of the insects is admirably given in the accompanying drawing from life. This contest usually ends in a real fight : one advances, and when at a distance of five or six inches makes a leap at his adversary, and the other, prepared for what is coming and in position, leaps too at the same time, so that they meet midway, and strike each other with their long spiny hind legs. It is done so quickly that the movements cannot be followed by the eye, but that they do hit hard is plain, as in many cases one is knocked down or flung to some distance away. Thus ends the round ; the beaten one rushes off as quickly as he can, as if hurt, but soon pulls up, and lowering his head, begins defiantly stridulating as before. The other follows him up, shrills at and attacks him again ; and you may see a dozen or twenty such encounters between the same two in the course of half an hour. Occasionally when the blow is struck they grasp each other and fall together ; and it is hardly to be doubted that they not only kick, like French wrestlers and bald-headed coots, but also make wicked use of their powerful black teeth. Some of the fighters I examined had lost a portion of one of the forelegs—one had lost portions of two—and these had evidently been bitten off. Perhaps they inflict even worse injuries. Hearing two shrilling against each other at a spot where there was a large clump of heath between them, I dropped down close by to listen and watch, when I discovered a third grasshopper sitting midway between the others in the centre of the heath-bush. This one appeared more excited than the others, keeping his wings violently agitated almost without a pause, and yet not the faintest sound proceeded from him. It proved on examination that



one of his stiff overwings had been bitten or torn off at the base, so that he had but half of his sounding apparatus left, and no music could his most passionate efforts ever draw from it, and, silent, he was no more in the world of green grasshoppers than a bird with a broken wing in the world of birds.

For it cannot be doubted that his own music is the greatest, the one all-absorbing motive and passion of his little soul. This may seem to be saying too much—to attribute something of human feelings to a creature so immeasurably far removed from us. Fantastic in shape, even among beings invertebrate and unhuman, one that indeed sees with opal eyes set in his green goat-like mask, but who hears with his forelegs, breathes through spiracles set in his sides, whipping the air for other sense-impressions and unimaginable sorts of knowledge with his excessively long limber horns, or antennae, just as a dry-fly fisher whips the crystal stream for speckled trout; and, finally, who wears his musical apparatus (his vocal organs) like an electric shield or plaster on the small of his back. Nevertheless it is impossible to watch their actions without regarding them as creatures of like passions with ourselves. The resemblance is most striking when we think not of what we, hard Saxons, are in this cold north, but of the more fiery, music-loving races in warmer countries. I remember in my early years, before the advent of 'Progress' in those outlying realms, that the ancient singing contests still flourished among the Gauchos of La Plata. They were all lovers of their own peculiar kind of music, singing endless *decimas* and *coplas* in high-pitched nasal tones to the strum-strumming of a spiracles] breathing-holes.

guitar ; and when any singer of a livelier mind than his fellows had the faculty of improvising, his fame went forth, and the others of his quality were filled with emulation, and journeyed long distances over the lonely plains to meet and sing against him. How curiously is this like our island grasshoppers, who have come to us unchanged from the past, and are neither Saxons nor Celts, but true, original, ancient Britons—the little grass-green people with passionate souls ! You can almost hear him say—this little green minstrel you have been watching when his shrill note has brought back as shrill an answer—as he resolutely sets out over the tall bending grasses in the direction of the sound, ‘ I’ll teach him to sing ! ’

W. H. HUDSON, *Hampshire Days*.

By kind permission of Messrs. J. M. Dent & Sons.

## BUTTERFLIES AND ANTS

OF our British butterflies, one of the last to disclose its remarkable history is the Arion, or Large Blue, an insect only found in a few favoured localities in England. Many patient experimenters have endeavoured to solve the mystery of the Arion, and one must mention at least the late Dr. Chapman, Capt. Purefoy, and Mr. Frohawk as amongst those whose labours have been most successful. In early summer the female butterfly lays its eggs on wild thyme, and from these emerge tiny larvae which feed on the flowers, and owing to their pinkish colour are very perfectly concealed. So much has long been known, but efforts to rear the little caterpillars were never successful. About August they began to wander. Wild thyme lost its attraction for them and they pined

and died. We cannot here repeat all the details of the research which ultimately revealed the truth. It must suffice to give the whole story as it is now known. Like many larvae of the 'Lycaenid' or 'Blue' butterflies the *Arion* larva has a gland on its back from which exude drops of a sweet honey-like fluid, and this powerfully attracts the ants. On leaving the wild thyme our caterpillar begins to wander, and since it is always in the neighbourhood of the ants with which it is associated it is not long before it meets one by the way. Follows bribery and corruption, for the ant, so long



'FIG. 50'

held up as a moral example, is but a weak creature in the presence of temptation. The 'honey' appears and the ant helps itself. What happens next is diffi-

cult to explain. The larva adopts a new attitude. It raises its back somewhat after the manner of a hostile cat. It would seem that this posture is favourable to free transport, for the ant proceeds to lift the larva from the ground, and with much labour carries its living honey-pot bodily into its nest (see Fig. 50, taken from one of Mr. Frohawk's beautiful drawings). It may be that in times long past the free winter quarters so provided for the larva were repaid by further gifts of honey. However that may be, such fair dealing seems to have fallen into disuse, for our experimenters tell us that once inside the nest the ants appear to take little or no further notice of the larva. But mark the depravity. Housed and protected for the winter, and hitherto a



blameless vegetarian, it now becomes a carnivorous enemy. From August to the following April, with a midwinter period of rest, it feeds solely on the larvae of the ants. There is no doubt of its guilt since their mangled remains are to be found within it. When it was carried in, it was but an eighth of an inch long, but by April it has grown to its full size, perhaps about three-quarters of an inch, and burying itself in the soft earth it becomes a pupa, to emerge at the end of June as the largest of our blue butterflies. No wonder such an underground history took so long to unravel; but it is by no means singular. *Lycaenid* butterflies are associated with ants all over the world and many curious examples of this are now known. In Australia there is a comparatively large butterfly related to the 'blues' which we may call the *Brassolis* butterfly. It is dark sepia with orange markings. The female deliberately lays her eggs on trees infested by the 'Green' ant, one of the most ferocious of its kind. Whether the larva furnishes the ants with honey, and how it gets into the nests, does not appear to be recorded, though doubtless it is carried there by the ants themselves. Here it feeds on the ant larvae, and the pupa is found in the nest. Were the larval skin to be thrown off in the usual way, leaving a soft and defenceless pupa, it would speedily be devoured and the species could never have survived. To overcome this difficulty an entirely abnormal method has been evolved. The larval skin is hard and armour-like.

Why then discard so serviceable a garment? The pupa forms within the larval skin and so is protected. It lies like a nut in its shell. Precisely how the butterfly makes its way out of such a cocoon is not yet known,

though the operation is carried out successfully. And now arises a new danger. The soft and tender butterfly would fall an easy prey to its voracious hosts. Until its wings have expanded it is very helpless, and yet this expansion must not take place too rapidly, for it has to make its way through winding paths to the outer world and full-sized wings would prevent its passage. Indeed, its wings at this stage are exceptionally small, and they take a full thirty minutes to expand. Even when expanded they are not dry enough for flight. Thus there is time enough for it to be eaten over and over again. Yet it invariably escapes. I have said that the butterfly is brown with orange markings, but this is its permanent dress. Freshly emerged it is white, the reason being that it has an overcoat of white scales on the top of its permanent covering. Legs, body, and antennae are all covered with this white fluff. Now ants dislike being 'messed up' with foreign substances, and 'messed up' they will be and that quickly if they molest our butterfly, for the white fluff comes off at a touch. So enraged do the ants become, and so intent on freeing themselves from the fluff, that they forget about the butterfly and concentrate on brushing down themselves and their companions. Safely into the open and with wings all ready for use the butterfly gives a few sharp flutters, all its white armour falls off like snow, and it appears in its true colours.

H. ELTRINGHAM, *Butterfly Lore*.

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## FORAGING ANTS

MANY confused statements have been published in books of travel, and copied in Natural History works,

regarding these ants, which appear to have been confounded with the Saüba. The Saüba is a vegetable feeder, and does not attack other animals ; the accounts that have been published regarding carnivorous ants which hunt in vast armies, exciting terror wherever they go, apply only to the Ecitons, or foraging ants, a totally different group of this tribe of insects. The Ecitons are called Tauóca by the Indians, who are always on the look-out for their armies when they traverse the forest, so as to avoid being attacked. I met with ten distinct species of them, nearly all of which have a different system of marching ; eight were new to science when I sent them to England. Some are found commonly in every part of the country, and one is peculiar to the open campos of Santarem ; but, as nearly all the species are found together at Ega, where the forest swarmed with their armies, I have left an account of the habits of the whole genus for this part of my narrative. The Ecitons resemble, in their habits, the Driver ants of Tropical Africa ; but they have no close relationship with them in structure, and indeed belong to quite another sub-group of the ant-tribe.

Like many other ants, the communities of Ecitons are composed, besides males and females, of two classes of workers, a large-headed (worker-major) and a small-headed (worker-minor) class ; the large-heads have, in some species, greatly lengthened jaws, the small-heads have jaws always of the ordinary shape ; but the two classes are not sharply defined in structure and function, except in two of the species. There is in all of them a little difference amongst the workers regarding the size of the head ; but in some species this is not sufficient to cause a separation into classes, with division of labour ;

in others the jaws are so monstrously lengthened in the worker-majors, that they are incapacitated from taking part in the labours which the worker-minors perform ; and again, in others the difference is so great that the distinction of classes becomes complete, one acting the part of soldiers, and the other that of workers. The peculiar feature in the habits of the *Eciton* genus is their hunting for prey in regular bodies, or armies. It is this which chiefly distinguishes them from the genus of common red stinging-ants, several species of which inhabit England, whose habit is to search for food in the usual irregular manner. All the *Ecitons* hunt in large organised bodies ; but almost every species has its own special manner of hunting.

*Eciton rapax*.—One of the foragers, *Eciton rapax*, the giant of its genus, whose worker-majors are half-an-inch in length, hunts in single file through the forest. There is no division into classes amongst its workers, although the difference in size is very great, some being scarcely one-half the length of others. The head and jaws, however, are always of the same shape, and a gradation in size is presented from the largest to the smallest, so that all are able to take part in the common labours of the colony. The chief employment of the species seems to be plundering the nests of a large and defenceless ant of another genus (*Formica*), whose mangled bodies I have often seen in their possession, as they were marching away. The armies of *Eciton rapax* are never very numerous.

*Eciton legionis*.—Another species, *E. legionis*, agrees with *E. rapax* in having workers not rigidly divisible into two classes ; but it is much smaller in size, not differing greatly, in this respect, from our common

English red ant (*Myrmica rubra*), which it also resembles in colour. The *Eciton legionis* lives in open places, and was seen only on the sandy campos of Santarem. The movements of its hosts were, therefore, much more easy to observe than those of all other kinds, which inhabit solely the densest thickets; its sting and bite, also, were less formidable than those of other species. The armies of *E. legionis* consist of many thousands of individuals, and move in rather broad columns. They are just as quick to break line, on being disturbed, and attack hurriedly and furiously any intruding object, as the other *Ecitons*. The species is not a common one, and I seldom had good opportunities of watching its habits. The first time I saw an army was one evening near sunset. The column consisted of two trains of ants, moving in opposite directions; one train empty-handed, the other laden with the mangled remains of insects, chiefly larvæ and pupæ of other ants. I had no difficulty in tracing the line to the spot from which they were conveying their booty: this was a low thicket; the *Ecitons* were moving rapidly about a heap of dead leaves; but as the short tropical twilight was deepening rapidly, and I had no wish to be benighted on the lonely campos, I deferred further examination until the next day.

On the following morning, no trace of ants could be found near the place where I had seen them the preceding day, nor were there signs of insects of any description in the thicket; but at the distance of eighty or one hundred yards, I came upon the same army, engaged, evidently, on a razzia of a similar kind to that of the previous evening; but requiring other

campos] plains.

razzia] pillaging excursion.

resources of their instinct, owing to the nature of the ground. They were eagerly occupied, on the face of an inclined bank of light earth, in excavating mines, whence, from a depth of eight or ten inches, they were extracting the bodies of a bulky species of ant, of the genus *Formica*. It was curious to see them crowding round the orifices of the mines, some assisting their comrades to lift out the bodies of the *Formicæ*, and others tearing them in pieces, on account of their weight being too great for a single *Eciton* ; a number of carriers seizing each a fragment, and carrying it off down the slope. On digging into the earth with a small trowel near the entrances of the mines, I found the nests of the *Formicæ*, with grubs and cocoons, which the *Ecitons* were thus invading, at a depth of about eight inches from the surface. The eager freebooters rushed in as fast as I excavated, and seized the ants in my fingers as I picked them out, so that I had some difficulty in rescuing a few entire for specimens. In digging the numerous mines to get at their prey, the little *Ecitons* seemed to be divided into parties, one set excavating, and another set carrying away the grains of earth. When the shafts became rather deep, the mining parties had to climb up the sides each time they wished to cast out a pellet of earth ; but their work was lightened for them by comrades, who stationed themselves at the mouth of the shaft, and relieved them of their burthens, carrying the particles, with an appearance of foresight which quite staggered me, a sufficient distance from the edge of the hole to prevent them from rolling in again. All the work seemed thus to be performed by intelligent co-operation amongst the host of eager little creatures ; but still there was not a rigid division of labour, for



some of them, whose proceedings I watched, acted at one time as carriers of pellets, and at another as miners, and all shortly afterwards assumed the office of conveyors of the spoil.

In about two hours, all the nests of *Formicæ* were rifled, though not completely, of their contents, and I turned towards the army of *Ecitons*, which were carrying away the mutilated remains. For some distance there were many separate lines of them moving along the slope of the bank; but a short distance off, these all converged, and then formed one close and broad column, which continued for some sixty or seventy yards, and terminated at one of those large termitariums or hillocks of white ants which are constructed of cemented material as hard as stone. The broad and compact column of ants moved up the steep sides of the hillock in a continued stream; many, which had hitherto trotted along empty-handed, now turned to assist their comrades with their heavy loads, and the whole descended into a spacious gallery or mine, opening on the top of the termitarium. I did not try to reach the nest, which I supposed to lie at the bottom of the broad mine, and therefore in the middle of the base of the stony hillock.

*Eciton drepanophora*.—The commonest species of foraging ants are the *Eciton hamata* and *E. drepanophora*, two kinds which resemble each other so closely that it requires attentive examination to distinguish them; yet their armies never intermingle, although moving in the same woods and often crossing each other's tracks. The two classes of workers look, at first sight, quite distinct, on account of the wonderful termitariums] mounds of termites (white ants).

amount of difference between the largest individuals of the one, and the smallest of the other. There are dwarfs not more than one-fifth of an inch in length, with small heads and jaws, and giants half an inch in length with monstrously enlarged head and jaws, all belonging to the same brood. There is not, however, a distinct separation of classes, individuals existing which connect together the two extremes. These Ecitons are seen in the pathways of the forest at all places on the banks of the Amazons, travelling in dense columns of countless thousands. One or other of them is sure to be met with in a woodland ramble, and it is to them, probably, that the stories we read in books on South America apply, of ants clearing houses of vermin, although I heard of no instance of their entering houses, their ravages being confined to the thickest parts of the forest.

When the pedestrian falls in with a train of these ants, the first signal given him is a twittering and restless movement of small flocks of plain-coloured birds (ant-thrushes) in the jungle. If this be disregarded until he advances a few steps farther, he is sure to fall into trouble, and find himself suddenly attacked by numbers of the ferocious little creatures. They swarm up his legs with incredible rapidity, each one driving his pincer-like jaws into his skin, and with the purchase thus obtained, doubling in its tail, and stinging with all its might. There is no course left but to run for it; if he is accompanied by natives they will be sure to give the alarm, crying 'Tauóca!' and scampering at full speed to the other end of the column of ants. The tenacious insects who have secured themselves to his legs then have to be plucked off one by one, a task which is generally not accomplished without pulling them in

twain, and leaving heads and jaws sticking in the wounds.

The errand of the vast ant-armies is plunder, as in the case of *Eciton legionis*; but from their moving always amongst dense thickets, their proceedings are not so easy to observe as in that species. Wherever they move, the whole animal world is set in commotion, and every creature tries to get out of their way. But it is especially the various tribes of wingless insects that have cause for fear, such as heavy-bodied spiders, ants of other species, maggots, caterpillars, larvæ of cockroaches and so forth, all of which live under fallen leaves, or in decaying wood. The *Ecitons* do not mount very high on trees, and therefore the nestlings of birds are not much incommoded by them. The mode of operation of these armies, which I ascertained only after long-continued observation, is as follows. The main column, from four to six deep, moves forward in a given direction, clearing the ground of all animal matter dead or alive, and throwing off here and there a thinner column to forage for a short time on the flanks of the main army, and re-enter it again after their task is accomplished. If some very rich place be encountered anywhere near the line of march, for example, a mass of rotten wood abounding in insect larvæ, a delay takes place, and a very strong force of ants is concentrated upon it. The excited creatures search every cranny and tear in pieces all the large grubs they drag to light. It is curious to see them attack wasps' nests, which are sometimes built on low shrubs. They gnaw away the papery covering to get at the larvæ, pupæ, and newly-hatched wasps, and cut everything to tatters, regardless of the infuriated owners which are flying about them.

In bearing off their spoil in fragments, the pieces are apportioned to the carriers with some degree of regard to fairness of load: the dwarfs taking the smallest pieces, and the strongest fellows with small heads the heaviest portions. Sometimes two ants join together in carrying one piece, but the worker-majors, with their unwieldy and distorted jaws, are incapacitated from taking any part in the labour. The armies never march far on a beaten path, but seem to prefer the entangled thickets where it is seldom possible to follow them. I have traced an army sometimes for half a mile or more, but was never able to find one that had finished its day's course and returned to its hive. Indeed, I never met with a hive; whenever the Ecitons were seen, they were always on the march.

I thought one day, at Villa Nova, that I had come upon a migratory horde of this indefatigable ant. The place was a tract of open ground near the river side, just outside the edge of the forest, and surrounded by rocks and shrubbery. A dense column of Ecitons was seen extending from the rocks on one side of the little haven, traversing the open space, and ascending the opposite declivity. The length of the procession was from sixty to seventy yards, and yet neither van nor rear was visible. All were moving in one and the same direction, except a few individuals on the outside of the column, which were running rearward, trotting along for a short distance, and then turning again to follow the same course as the main body. But these rearward movements were going on continually from one end to the other of the line, and there was every appearance of there being a means of keeping up a common understanding amongst all the members of the army, for the

retrograding ants stopped very often for a moment to touch one or other of their onward-moving comrades with their antennæ; a proceeding which has been noticed in other ants, and supposed to be their mode of conveying intelligence. When I interfered with the column or abstracted an individual from it, news of the disturbance was very quickly communicated to a distance of several yards towards the rear, and the column at that point commenced retreating. All the small-headed workers carried in their jaws a little cluster of white maggots, which I thought, at the time, might be young larvæ of their own colony, but afterwards found reason to conclude were the grubs of some other species whose nests they had been plundering, the procession being most likely not a migration, but a column on a marauding expedition.

The position of the large-headed individuals in the marching column was rather curious. There was one of these extraordinary fellows to about a score of the smaller class; none of them carried anything in their mouths, but all trotted along empty-handed and outside the column, at pretty regular intervals from each other, like subaltern officers in a marching regiment of soldiers. It was easy to be tolerably exact in this observation, for their shining white heads made them very conspicuous amongst the rest, bobbing up and down as the column passed over the inequalities of the road. I did not see them change their position, or take any notice of their small-headed comrades marching in the column, and when I disturbed the line, they did not prance forth or show fight so eagerly as the others. These large-headed members of the community have been considered by some authors as a soldier class,

like the similarly-armed caste in Termites ; but I found no proof of this, at least in the present species, as they always seemed to be rather less pugnacious than the worker-minors, and their distorted jaws disabled them from fastening on a plane surface like the skin of an attacking animal. I am inclined, however, to think that they may act, in a less direct way, as protectors of the community, namely, as indigestible morsels to the flocks of ant-thrushes which follow the marching columns of these Ecitons, and are the most formidable enemies of the species. It is possible that the hooked and twisted jaws of the large-headed class may be effective weapons of annoyance when in the gizzards or stomachs of these birds, but I unfortunately omitted to ascertain whether this was really the fact.

The life of these Ecitons is not all work, for I frequently saw them very leisurely employed in a way that looked like recreation. When this happened, the place was always a sunny nook in the forest. The main column of the army and the branch columns, at these times, were in their ordinary relative positions ; but, instead of pressing forward eagerly, and plundering right and left, they seemed to have been all smitten with a sudden fit of laziness. Some were walking slowly about, others were brushing their antennæ with their fore-feet ; but the drollest sight was their cleaning one another. Here and there an ant was seen stretching forth first one leg and then another, to be brushed or washed by one or more of its comrades, who performed the task by passing the limb between the jaws and the tongue, finishing by giving the antennæ a friendly wipe. It was a curious spectacle, and one well calculated to increase one's amazement at the similarity between the



instinctive actions of ants and the acts of rational beings, a similarity which must have been brought about by two different processes of development of the primary qualities of mind. The actions of these ants looked like simple indulgence in idle amusement. Have these little creatures, then, an excess of energy beyond what is required for labours absolutely necessary to the welfare of their species, and do they thus expend it in mere sportiveness, like young lambs or kittens, or in idle whims like rational beings? It is probable that these hours of relaxation and cleaning may be indispensable to the effective performance of their harder labours, but whilst looking at them, the conclusion that the ants were engaged merely in play was irresistible.

HENRY WALTER BATES, *The Naturalist on the Amazons*.

## THE WANDERING WOOD

AND foorth they passe, with pleasure forward led,  
 Ioying to heare the birdes sweete harmony,  
 Which therein shrouded from the tempest dred,  
 Seemd in their song to scorne the cruell sky.  
 Much can they prayse the trees so straight and hy,  
 The sayling Pine, the Cedar proud and tall,  
 The vine-prop Elme, the Poplar neuer dry,  
 The builder Oake, sole king of forrests all,  
 The Aspine good for staues, the Cypresse funerall.

The Laurell, meed of mightie Conquerours  
 And Poets sage, the Firre that weepeth still,  
 The Willow worne of forlorne Paramours,  
 The Eugh obedient to the benders will,  
 The Birch for shaftes, the Sallow for the mill,

can] did.

Eugh] Yew.

The Mirrhe sweete bleeding in the bitter wound,  
The warlike Beech, the Ash for nothing ill,  
The fruitfull Oliue, and the Platane round,  
The caruer Holme, the Maple seeldom inward sound.

EDMUND SPENSER, *The Faerie Queene*.

### A GROVE

THERE stood the elm, whose shade so mildly dim  
Doth nourish all that groweth under him ;  
Cypress that like pyramides run topping,  
And hurt the least of any by their dropping ;  
The alder, whose fat shadow nourisheth,  
Each plant set near to him long flourisheth ;  
The heavy-headed plane-tree, by whose shade  
The grass grows thickest, men are fresher made ;  
The oak that best endures the thunder-shocks ;  
The everlasting eben, cedar, box ;  
The olive that in wainscot never cleaves ;  
The amorous vine, which in the elm still weaves ;  
The lotus, juniper, where worms ne'er enter ;  
The pine, with whom men through the ocean venture ;  
The warlike yew, by which (more than the lance)  
The strong-armed English spirits conquered France.  
Amongst the rest the tamarisk there stood,  
For housewives' besoms only known most good ;  
The cold-place-loving birch, and service-tree ;  
The walnut loving vales, and mulberry ;  
The maple, ash, that do delight in fountains  
Which have their currents by the sides of mountains ;  
The laurel, myrtle, ivy, date, which hold  
Their leaves all winter, be it ne'er so cold ;  
The fir, that oftentimes doth rosin drop ;  
The beech, that scales the welkin with his top ;

All these, and thousand more within this grove,  
By all the industry of Nature strove  
To frame an harbour that might keep within it  
The best of beauties that the world hath in it.

WILLIAM BROWNE.

## YARDLEY OAK

THOU wast a bauble once ; a cup and ball,  
Which babes might play with ; and the thievish jay  
Seeking her food, with ease might have purloin'd  
The auburn nut that held thee, swallowing down  
Thy yet close-folded latitude of boughs  
And all thine embryo vastness, at a gulp.  
But Fate thy growth decreed : autumnal rains  
Beneath thy parent tree mellow'd the soil  
Design'd thy cradle, and a skipping deer,  
With pointed hoof dibbling the glebe, prepar'd  
The soft receptacle in which secure  
Thy rudiments should sleep the winter through.

Thou fell'st mature, and in the loamy clod  
Swelling, with vegetative force instinct  
Didst burst thine egg, as theirs the fabled Twins  
Now stars ; two lobes, protruding, pair'd exact ;  
A leaf succeeded, and another leaf,  
And all the elements thy puny growth  
Fost'ring propitious, thou becam'st a twig.

Time made thee what thou wast—King of the woods ;  
And Time hath made thee what thou art—a cave  
For owls to roost in. Once thy spreading boughs  
O'erhung the champain ; and the numerous flock  
That graz'd it stood beneath that ample cope  
Uncrowded, yet safe-sheltered from the storm.

the fabled Twins] Castor and Pollux.

No flock frequents thee now. Thou hast outliv'd  
 Thy popularity and art become  
 (Unless verse rescue thee awhile) a thing  
 Forgotten, as the foliage of thy youth.

While thus through all the stages thou hast push'd  
 Of treeship, first a seedling hid in grass,  
 Then twig, then sapling, and, as century roll'd  
 Slow after century, a giant bulk  
 Of girth enormous, with moss-cushion'd root  
 Upheav'd above the soil, and sides imboss'd  
 With prominent wens globose, till at the last  
 The rottenness, which time is charg'd t' inflict  
 On other mighty ones, found also thee—  
 What exhibitions various hath the world  
 Witness'd of mutability in all  
 That we account most durable below !  
 Time was, when, settling on thy leaf, a fly  
 Could shake thee to the root—and time has been  
 When tempests could not. At thy firmest age  
 Thou hadst within thy bole solid contents  
 That might have ribb'd the sides or plank'd the deck  
 Of some flagg'd admiral ; and tortuous arms,  
 The ship-wright's darling treasure, didst present  
 To the four-quarter'd winds, robust and bold,  
 Warp'd into tough knee-timber, many a load.  
 But the axe spar'd thee ; in those thriftier days  
 Oaks fell not, hewn by thousands, to supply  
 The bottomless demands of contest wag'd  
 For senatorial honours. Thus to Time  
 The task was left to whittle thee away  
 With his sly scythe, whose ever-nibbling edge

admiral] flag-ship.

contest . . . honours] wars provoked by ambitious statesmen.

Noiseless, an atom and an atom more  
Disjoining from the rest, has, unobserv'd,  
Achiev'd a labour, which had, far and wide,  
(By man perform'd) made all the forest ring.

Embowell'd now, and of thy ancient self  
Possessing nought but the scoop'd rind, that seems  
An huge throat calling to the clouds for drink,  
Which it would give in riv'lets to thy root,  
Thou temptest none, but rather much forbid'st  
The feller's toil, which thou couldst ill requite.  
Yet is thy root sincere, sound as the rock,  
A quarry of stout spurs and knotted fangs,  
Which, crook'd into a thousand whimsies, clasp  
The stubborn soil, and hold thee still erect.

Thine arms have left thee. Winds have rent them off  
Long since, and rovers of the forest wild  
With bow and shaft have burnt them. Some have left  
A splinter'd stump bleach'd to a snowy white ;  
And some memorial none where once they grew.  
Yet life still lingers in thee, and puts forth  
Proof not contemptible of what she can,  
Even where death predominates. The spring  
Thee finds not less alive to her sweet force  
Than yonder upstarts of the neighbour wood,  
So much thy juniors, who their birth receiv'd  
Half a millennium since the date of thine.

WILLIAM COWPER.

### YEW TREES

IF never a word has been written about that red colour  
with which nature touches the old stones to make them  
beautiful, a thousand or ten thousand things have been

said about the yew, the chief feature and ornament of the village churchyard, and many conjectures have we seen as to the reason of the very ancient custom of planting this tree where the dead are laid. The tree itself gives a better reason than any contained in books. It says something to the soul in man which the talking or chattering oak omitted to tell the modern poet ; but very long ago someone said in the *Death of Fergus*, ' Patriarch of long-lasting woods is the yew ; sacred to forests as is well known.' That ancient sacred character, which survived the introduction of Christianity, lives still in every mind that has kept any vestige of animism, the root and essence of all that is wonderful and sacred in nature. That red and purple bark is the very colour of life, and this tree's life, compared with other things, is everlasting. The stones we set up as memorials grow worn and seamed and hoary with age, even like men, and crumble to dust at last ; in time new stones are put in their place, and these, too, grow old and perish, and are succeeded by others ; and through all changes, through all ages, the tree lives on unchanged. With its huge, tough, red trunk ; its vast, knotted arms outstretched ; its rich, dark mantle of undying foliage, it stands like a protecting god on earth, patriarch and monarch of the woods ; and indeed it seems but right and natural that not to oak nor holly, nor any other revered tree, but to the yew it was given to keep guard over the bodies and souls of those who have been laid in the earth.

W. H. HUDSON, *Hampshire Days*.

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the talking . . . poet] The reference is to Tennyson's poem *The Talking Oak*.

animism] the belief that all things have souls.



## GARDEN FLOWERS

AND then again he turneth to his play,  
 To spoil the pleasures of that paradise ;  
 The wholesome sage, and lavender still grey,  
 Rank-smelling rue, and cumin good for eyes,  
 The rosè reigning in the pride of May,  
 Sharp hyssop, good for green wounds' remedies,  
 Fair marigolds, and bees-alluring thyme,  
 Sweet marjoram, and daisies decking prime,  
 Cool violets, and orpine growing still,  
 Embathèd balm, and cheerful galingale,  
 Fresh costmary, and breathful camomile,  
 Dull poppy, and drink-quickenning setuale,  
 Vein-healing vervain, and head-purging dill,  
 Sound savory, and basil hearty-hale,  
 Fat coleworts, and comfórting perseline,  
 Cold lettuce, and refreshing rosmarine.

EDMUND SPENSER, *Muiopotmos*.

## OF GARDENS

GOD Almighty first planted a garden ; and, indeed, it is the purest of human pleasures ; it is the greatest refreshment to the spirits of man ; without which buildings and palaces are but gross handy-works : and a man shall ever see, that, when ages grow to civility and elegancy, men come to build stately, sooner than to garden finely ; as if gardening were the greater perfection. I do hold it in the royal ordering of gardens, there ought to be gardens for all the months in the year, in which, severally, things of beauty may be

he] the butterfly.    setuale] valerian.    perseline] parsley.

then in season. For December, and January, and the latter part of November, you must take such things as are green all winter : holly, ivy, bays, juniper, cypress-trees, yew, pineapple-trees ; fir-trees, rosemary, lavender ; periwinkle, the white, the purple, and the blue ; germander, flags, orange-trees, lemon-trees, and myrtles, if they be stoved ; and sweet marjoram, warm set. There followeth, for the latter part of January and February, the mezereon-tree, which then blossoms : crocus vernus, both the yellow and the grey ; prim-roses, anemones, the early tulip, the hyacinthus orientalis, chamairis fritellaria. For March, there come violets, especially the single blue, which are the earliest ; the yellow daffodil, the daisy, the almond-tree in blossom, the peach-tree in blossom, the cornelian-tree in blossom, sweet-briar. In April follow the double white violet, the wall-flower, the stock-gilliflower, the cowslip, flower-de-luces, and lilies of all natures ; rosemary flowers, the tulip, the double peony, the pale daffodil, the French honeysuckle, the cherry-tree in blossom, the damascene and plum-trees in blossom, the white thorn in leaf, the lilac-tree. In May and June come pinks of all sorts, specially the blush-pink ; roses of all kinds, except the musk, which comes later ; honeysuckles, strawberries, bugloss, columbine, the French marygold, flos Africanus, cherry-tree in fruit, ribes, figs in fruit, rasps, vine-flowers, lavender in flowers, the sweet satyrian, with the white flower ; herba muscaria, lilium convallium, the apple-tree in blossom. In July come gilliflowers of all varieties, musk-roses, the lime-tree in blossom, early pears, and plums in fruit, genitings, codlins. In August come genitings, codlins] jennetings, codlings. Kinds of early apple.

plums of all sorts in fruit, pears, apricots, barberries, filberts, musk-melons, monks-hoods, of all colours. In September come grapes, apples, poppies of all colours, peaches, melocotones, nectarines, cornelians, wardenes, quinces. In October, and the beginning of November come services, medlars, bullaces, roses cut or removed to come late, hollyoaks, and such like. These particulars are for the climate of London ; but my meaning is perceived, that you may have ‘ver perpetuum,’ as the place affords.

And because the breath of flowers is far sweeter in the air (where it comes and goes, like the warbling of music), than in the hand, therefore nothing is more fit for that delight, than to know what be the flowers and plants that do best perfume the air. Roses, damask and red, are fast flowers of their smells ; so that you may walk by a whole row of them, and find nothing of their sweetness ; yea, though it be in a morning’s dew. Bays, likewise, yield no smell as they grow, rosemary little, nor sweet marjoram ; that which, above all others, yields the sweetest smell in the air, is the violet, especially the white double violet, which comes twice a year, about the middle of April, and about Bartholomew-tide. Next to that is the musk-rose ; then the strawberry-leaves dying, with a most excellent cordial smell ; then the flower of the vines, it is a little dust like the dust of a bent, which grows upon the cluster in the first coming forth ; then sweet-briar, then wallflowers, which are very delightful to be set under a parlour or lower chamber window ; then pinks and

melocotones] quinces.      bullaces] shrubs akin to the sloe.

‘ver perpetuum’] perpetual spring.

Bartholomew-tide] August 24.

gilliflowers, specially the matted pink and clove gilliflower; then the flowers of the lime-trees; then the honeysuckles, so they be somewhat afar off. Of bean-flowers I speak not, because they are field-flowers; but those which perfume the air most delightfully, not passed by as the rest, but being trodden upon and crushed, are three; that is, burnet, wild thyme, and water-mints; therefore you are to set whole alleys of them, to have the pleasure when you walk or tread.

FRANCIS BACON, LORD VERULAM, *Essays*.

## THE GARDEN

(TRANSLATED)

How vainly men themselves amaze  
To win the palm, the oak, or bays,  
And their incessant labours see  
Crowned from some single herb, or tree,  
Whose short and narrow-vergèd shade  
Does prudently their toils upbraid,  
While all flowers and all trees do close,  
To weave the garlands of repose !

Fair Quiet, have I found thee here,  
And Innocence, thy sister dear ?  
Mistaken long, I sought you then  
In busy companies of men.  
Your sacred plants, if here below,  
Only among the plants will grow ;  
Society is all but rude  
To this delicious solitude.

No white nor red was ever seen  
So amorous as this lovely green.

Fond lovers, cruel as their flame,  
Cut in these trees their mistress' name :  
Little, alas ! they know or heed,  
How far these beauties hers exceed !  
Fair trees ! wheres'e'er your barks I wound,  
No name shall but your own be found.

When we have run our passion's heat,  
Love hither makes his best retreat,  
The gods, that mortal beauty chase,  
Still in a tree did end their race ;  
Apollo hunted Daphne so,  
Only that she might laurel grow ;  
And Pan did after Syrinx speed,  
Not as a nymph, but for a reed.

What wond'rous life is this I lead !  
Ripe apples drop about my head ;  
The luscious clusters of the vine  
Upon my mouth do crush their wine ;  
The nectarine, and curious peach,  
Into my hands themselves do reach ;  
Stumbling on melons, as I pass,  
Insnared with flowers, I fall on grass.

Meanwhile the mind, from pleasure less,  
Withdraws into its happiness ;—  
The mind, that ocean where each kind  
Does straight its own resemblance find ;—  
Yet it creates, transcending these,  
Far other worlds, and other seas,  
Annihilating all that's made  
To a green thought in a green shade.

Here at the fountain's sliding foot,  
Or at some fruit-tree's mossy root,  
Casting the body's vest aside,  
My soul into the boughs does glide :  
There, like a bird, it sits and sings,  
Then whets and claps its silver wings,  
And, till prepared for longer flight,  
Waves in its plumes the various light.

Such was that happy garden-state,  
While man there walked without a mate :  
After a place so pure and sweet,  
What other help could yet be meet !  
But 'twas beyond a mortal's share  
To wander solitary there :  
Two paradises 'twere in one,  
To live in paradise alone.

How well the skilful gardener drew  
Of flowers and herbs this dial new,  
Where, from above, the milder sun  
Does through a fragrant zodiac run,  
And, as it works, th' industrious bee  
Computes its time as well as we !  
How could such sweet and wholesome hours  
Be reckoned but with herbs and flowers ?

ANDREW MARVELL.

## THOREAU

HENRY DAVID THOREAU was the last male descendant of a French ancestor who came to this country from the Isle of Guernsey. His character exhibited occasional



traits drawn from this blood, in singular combination with a very strong Saxon genius.

He was born in Concord, Massachusetts, on the 12th of July, 1817. He was graduated at Harvard College in 1837, but without any literary distinction. An iconoclast in literature, he seldom thanked colleges for their service to him, holding them in small esteem, whilst yet his debt to them was important. After leaving the University, he joined his brother in teaching a private school, which he soon renounced. His father was a manufacturer of lead-pencils, and Henry applied himself for a time to this craft, believing he could make a better pencil than was then in use. After completing his experiments, he exhibited his work to chemists and artists in Boston, and having obtained their certificates to its excellence and to its equality with the best London manufacture, he returned home contented. His friends congratulated him that he had now opened his way to fortune. But he replied, that he should never make another pencil. 'Why should I? I would not do again what I have done once.' He resumed his endless walks and miscellaneous studies, making every day some new acquaintance with Nature, though as yet never speaking of zoology or botany, since, though very studious of natural facts, he was incurious of technical and textual science.

At this time, a strong, healthy youth, fresh from college, whilst all his companions were choosing their profession, or eager to begin some lucrative employment, it was inevitable that his thoughts should be exercised on the same question, and it required rare decision to refuse all the accustomed paths and keep his solitary freedom at the cost of disappointing the

natural expectations of his family and friends : all the more difficult that he had a perfect probity, was exact in securing his own independence, and in holding every man to the like duty. But Thoreau never faltered. He was a born protestant. He declined to give up his large ambition of knowledge and action for any narrow craft or profession, aiming at a much more comprehensive calling, the art of living well. If he slighted and defied the opinions of others, it was only that he was more intent to reconcile his practice with his own belief. Never idle or self-indulgent, he preferred, when he wanted money, earning it by some piece of manual labour agreeable to him, as building a boat or a fence, planting, grafting, surveying, or other short work, to any long engagements. With his hardy habits and few wants, his skill in woodcraft, and his powerful arithmetic, he was very competent to live in any part of the world. It would cost him less time to supply his wants than another. He was therefore secure of his leisure.

A natural skill for mensuration, growing out of his mathematical knowledge, and his habit of ascertaining the measures and distances of objects which interested him, the size of trees, the depth and extent of ponds and rivers, the heights of mountains, and the air-line distance of his favourite summits,—this, and his intimate knowledge of the territory about Concord, made him drift into the profession of land-surveyor. It had the advantage for him that it led him continually into new and secluded grounds, and helped his studies of Nature. His accuracy and skill in this work were readily appreciated, and he found all the employment he wanted.

He could easily solve the problems of the surveyor, but he was daily beset with graver questions, which he manfully confronted. He interrogated every custom, and wished to settle all his practice on an ideal foundation. He was a protestant *à outrance*, and few lives contain so many renunciations. He was bred to no profession; he never married; he lived alone; he never went to church; he never voted; he refused to pay a tax to the State; he ate no flesh; he drank no wine; he never knew the use of tobacco; and, though a naturalist, he used neither trap nor gun. He chose, wisely no doubt for himself, to be the bachelor of thought and Nature. He had no talent for wealth, and knew how to be poor without the least hint of squalor or inelegance. Perhaps he fell into his way of living without forecasting it much, but approved it with later wisdom. 'I am often reminded,' he wrote in his journal, 'that if I had bestowed on me the wealth of Cræsus, my aims must be still the same, and my means essentially the same.' He had no temptations to fight against,—no appetites, no passions, no taste for elegant trifles. A fine house, dress, the manners and talk of highly cultivated people were all thrown away on him. He much preferred a good Indian, and considered these refinements as impediments to conversation, wishing to meet his companion on the simplest terms. He declined invitations to dinner-parties, because there each was in every one's way, and he could not meet the individuals to any purpose. 'They make their pride,' he said, 'in making their dinner cost much; I make my pride in making my dinner cost little.' When asked at table what dish he preferred, he answered, 'The nearest.' He did not like the taste of wine, and never had a vice

1111

in his life. He said,—‘ I have a faint recollection of pleasure derived from smoking dried lily-stems, before I was a man. I had commonly a supply of these. I have never smoked anything more noxious.’

It was said of Plotinus that he was ashamed of his body, and 'tis very likely he had good reason for it,—that his body was a bad servant, and he had not skill in dealing with the material world, as happens often to men of abstract intellect. But Mr. Thoreau was equipped with a most adapted and serviceable body. He was of short stature, firmly built, of light complexion, with strong, serious blue eyes, and a grave aspect,—his face covered in the late years with a becoming beard. His senses were acute, his frame well-knit and hardy, his hands strong and skilful in the use of tools. And there was a wonderful fitness of body and mind. He could pace sixteen rods more accurately than another man could measure them with rod and chain. He could find his path in the woods at night, he said, better by his feet than his eyes. He could estimate the measure of a tree very well by his eye; he could estimate the weight of a calf or a pig, like a dealer. From a box containing a bushel or more of loose pencils, he could take up with his hands fast enough just a dozen pencils at every grasp. He was a good swimmer, runner, skater, boatman, and would probably outwalk most countrymen in a day's journey. And the relation of body to mind was still finer than we have indicated. He said he wanted every stride his legs made. The length of his walk uniformly made the length of his writing. If shut up in the house he did not write at all.

He had a strong common-sense, like that which Rose

Flammock, the weaver's daughter in Scott's romance, commends in her father, as resembling a yardstick, which, whilst it measures dowlas and diaper, can equally well measure tapestry and cloth of gold. He had always a new resource. When I was planting forest trees, and had procured half a peck of acorns, he said that only a small portion of them would be sound, and proceeded to examine them and select the sound ones. But finding this took time, he said, 'I think, if you put them all into water, the good ones will sink'; which experiment we tried with success. He could plan a garden or a house or a barn; would have been competent to lead a 'Pacific Exploring Expedition'; could give judicious counsel in the gravest private or public affairs.

He lived for the day, not cumbered and mortified by his memory. If he brought you yesterday a new proposition, he would bring you to-day another not less revolutionary. A very industrious man, and setting, like all highly organized men, a high value on his time, he seemed the only man of leisure in town, always ready for any excursion that promised well, or for conversation prolonged into late hours. His trenchant sense was never stopped by his rules of daily prudence, but was always up to the new occasion. He liked and used the simplest food, yet, when some one urged a vegetable diet, Thoreau thought all diets a very small matter, saying that 'the man who shoots the buffalo lives better than the man who boards at the Graham House.' He said,—'You can sleep near the railroad, and never be disturbed: Nature knows very well what sounds are worth attending to, and has made up her

Scott's romance] See *The Betrothed*, ch. xii.

mind not to hear the railroad-whistle. But things respect the devout mind, and a mental ecstasy was never interrupted.' He noted what repeatedly befell him, that, after receiving from a distance a rare plant, he would presently find the same in his own haunts. And those pieces of luck which happen only to good players happened to him. One day, walking with a stranger, who inquired where Indian arrow-heads could be found, he replied, 'Everywhere,' and, stooping forward, picked one on the instant from the ground. At Mount Washington, in Tuckerman's Ravine, Thoreau had a bad fall, and sprained his foot. As he was in the act of getting up from his fall, he saw for the first time the leaves of the *Arnica mollis*.

One of the weapons he used, more important to him than microscope or alcohol-receiver to other investigators, was a whim which grew on him by indulgence, yet appeared in gravest statement, namely, of extolling his own town and neighbourhood as the most favoured centre for natural observation. He remarked that the Flora of Massachusetts embraced almost all the important plants of America,—most of the oaks, most of the willows, the best pines, the ash, the maple, the beech, the nuts. He returned Kane's *Arctic Voyage* to a friend of whom he had borrowed it, with the remark, that 'Most of the phenomena noted might be observed in Concord.' He seemed a little envious of the Pole, for the coincident sunrise and sunset, or five minutes' day after six months: a splendid fact, which Annarsnuc had never afforded him. He found red snow in one of his walks, and told me that he expected to find yet the *Victoria regia* in Concord. He was the attorney of the indigenous plants, and owned to a



preference of the weeds to the imported plants as of the Indian to the civilized man, and noticed, with pleasure, that the willow bean-poles of his neighbour had grown more than his beans. 'See these weeds,' he said, 'which have been hoed at by a million farmers all spring and summer, and yet have prevailed, and just now come out triumphant over all lanes, pastures, fields, and gardens, such is their vigour. We have insulted them with low names, too,—as Pigweed, Wormwood, Chickweed, Shad-blossom.' He says, 'They have brave names, too,—Ambrosia, Stellaria, Amelanchia, Amaranth, etc.'

I think his fancy for referring everything to the meridian of Concord did not grow out of any ignorance or depreciation of other longitudes or latitudes, but was rather a playful expression of his conviction of the indifferency of all places, and that the best place for each is where he stands. He expressed it once in this wise:—'I think nothing is to be hoped from you, if this bit of mould under your feet is not sweeter to you to eat than any other in this world, or in any world.'

The other weapon with which he conquered all obstacles in science was patience. He knew how to sit immovable, a part of the rock he rested on, until the bird, the reptile, the fish, which had retired from him, should come back and resume its habits, nay, moved by curiosity, should come to him and watch him.

It was a pleasure and a privilege to walk with him. He knew the country like a fox or a bird, and passed through it as freely by paths of his own. He knew every track in the snow or on the ground, and what creature had taken this path before him. One must

submit abjectly to such a guide, and the reward was great. Under his arm he carried an old music-book to press plants; in his pocket, his diary and pencil, a spy-glass for birds, microscope, jack-knife and twine. He wore a straw hat, stout shoes, strong grey trousers, to brave scrub-oaks and smilax, and to climb a tree for a hawk's or a squirrel's nest. He waded into the pool for the water-plants, and his strong legs were no insignificant part of his armour. On the day I speak of he looked for the *Menyanthes*, detected it across the wide pool, and, on examination of the florets, decided that it had been in flower five days. He drew out of his breast-pocket his diary, and read the names of all the plants that should bloom on this day, whereof he kept account as a banker when his notes fall due. The *Cypripedium* not due till to-morrow. He thought that, if waked up from a trance, in this swamp, he could tell by the plants what time of the year it was within two days. The redstart was flying about, and presently the fine grosbeaks, whose brilliant scarlet 'makes the rash gazer wipe his eye,' and whose fine clear note Thoreau compared to that of a tanager which has got rid of its hoarseness. Presently he heard a note which he called that of the night-warbler, a bird he had never identified, had been in search of twelve years, which always, when he saw it, was in the act of diving down into a tree or bush, and which it was vain to seek; the only bird which sings indifferently by night and by day. I told him he must beware of finding and booking it, lest life should have nothing more to show him. He said, 'What you seek in vain for, half your life, one day you come full upon all the family at dinner. You makes . . . eye] From George Herbert's poem *Virtue*.

seek it like a dream, and as soon as you find it you become its prey.'

His determination on Natural History was organic. He confessed that he sometimes felt like a hound or a panther, and, if born among Indians, would have been a fell hunter. But, restrained by his Massachusetts culture, he played out the game in this mild form of botany and ichthyology. His intimacy with animals suggested what Thomas Fuller records of Butler the apiologist, that 'either he had told the bees things or the bees had told him.' Snakes coiled round his legs; the fishes swam into his hand, and he took them out of the water; he pulled the woodchuck out of its hole by the tail, and took the foxes under his protection from the hunters. Our naturalist had perfect magnanimity; he had no secrets: he would carry you to the heron's haunt, or even to his most prized botanical swamp,—possibly knowing that you could never find it again, yet willing to take his risks.

He was equally interested in every natural fact. The depth of his perception found likeness of law throughout Nature, and I know not any genius who so swiftly inferred universal law from the single fact. He was no pedant of a department. His eye was open to beauty, and his ear to music. He found these, not in rare conditions, but wheresoever he went. He thought the best of music was in single strains; and he found poetic suggestion in the humming of the telegraph-wire.

He had many elegancies of his own, whilst he scoffed at conventional elegance. Thus, he could not bear to hear the sound of his own steps, the grit of gravel; and therefore never willingly walked in the road, but in the grass, on mountains and in woods. His senses were

acute, and he remarked that by night every dwelling-house gives out bad air, like a slaughter-house. He liked the pure fragrance of melilot. He honoured certain plants with special regard, and, over all, the pond-lily,—then, the gentian, and the *Mikania scandens*, and ‘life-everlasting,’ and a bass-tree which he visited every year when it bloomed, in the middle of July. He thought the scent a more oracular inquisition than the sight,—more oracular and trustworthy. The scent, of course, reveals what is concealed from the other senses. By it he detected earthiness. He delighted in echoes, and said they were almost the only kind of kindred voices that he heard. He loved Nature so well, was so happy in her solitude, that he became very jealous of cities and the sad work which their refinements and artifices made with man and his dwelling. The axe was always destroying his forest. ‘Thank God,’ he said, ‘they cannot cut down the clouds!’ ‘All kinds of figures are drawn on the blue ground with this fibrous white paint.’

I subjoin a few sentences taken from his unpublished manuscripts, not only as records of his thought and feeling, but for their power of description and literary excellence :—

‘Some circumstantial evidence is very strong, as when you find a trout in the milk.’

‘The chub is a soft fish, and tastes like boiled brown paper salted.’

‘The youth gets together his materials to build a bridge to the moon, or, perchance, a palace or temple on the earth, and, at length, the middle-aged man concludes to build a wood-shed with them.’

‘The locust z-ing.’

' Devil's-needles zigzagging along the Nut-Meadow brook.'

' Sugar is not so sweet to the palate as sound to the healthy ear.'

' I put on some hemlock-boughs, and the rich salt crackling of their leaves was like mustard to the ear, the crackling of uncountable regiments. Dead trees love the fire.'

' The bluebird carries the sky on his back.'

' The tanager flies through the green foliage as if it would ignite the leaves.'

' If I wish for a horse-hair for my compass-sight I must go to the stable; but the hair-bird, with her sharp eyes, goes to the road.'

' Immortal water, alive even to the superficialities.'

' Fire is the most tolerable third party.'

' Nature made ferns for pure leaves, to show what she could do in that line.'

' No tree has so fair a bole and so handsome an in-step as the beech.'

' How did these beautiful rainbow-tints get into the shell of the fresh-water clam, buried in the mud at the bottom of our dark river? '

' Hard are the times when the infant's shoes are second-foot.'

' We are strictly confined to our men to whom we give liberty.'

' Nothing is so much to be feared as fear. Atheism may comparatively be popular with God himself.'

' Of what significance the things you can forget? A little thought is sexton to all the world.'

' How can we expect a harvest of thought who have not had a seed-time of character? '

‘ Only he can be trusted with gifts who can present a face of bronze to expectations.’

‘ I ask to be melted. You can only ask of the metals that they be tender to the fire that melts them. To nought else can they be tender.’

There is a flower known to botanists, one of the same genus with our summer plant called ‘ Life-Everlasting,’ a *Gnaphalium* like that which grows on the most inaccessible cliffs of the Tyrolese mountains, where the chamois dare hardly venture, and which the hunter, tempted by its beauty, and by his love (for it is immensely valued by the Swiss maidens), climbs the cliffs to gather, and is sometimes found dead at the foot, with the flower in his hand. It is called by botanists the *Gnaphalium leontopodium*, but by the Swiss *Edelweiss*, which signifies *Noble Purity*. Thoreau seemed to me living in the hope to gather this plant, which belonged to him of right. The scale on which his studies proceeded was so large as to require longevity, and we were the less prepared for his sudden disappearance. The country knows not yet, or in the least part, how great a son it has lost. It seems an injury that he should leave in the midst his broken task which none else can finish,—a kind of indignity to so noble a soul that he should depart out of Nature before yet he has been really shown to his peers for what he is. But he, at least, is content. His soul was made for the noblest society; he had in a short life exhausted the capabilities of this world; wherever there is knowledge, wherever there is virtue, wherever there is beauty, he will find a home.

RALPH WALDO EMERSON.



## A NATURALIST'S DAY IN THE TROPICS

WE used to rise soon after dawn, when Isidoro would go down to the city, after supplying us with a cup of coffee, to purchase the fresh provisions for the day. The two hours before breakfast were devoted to ornithology. At that early period of the day the sky was invariably cloudless (the thermometer marking 72° or 73° Fahr.); the heavy dew or the previous night's rain, which lay on the moist foliage, becoming quickly dissipated by the glowing sun, which, rising straight out of the east, mounted rapidly towards the zenith. All nature was fresh, new leaf and flower-buds expanding rapidly. Some mornings a single tree would appear in flower amidst what was the preceding evening a uniform green mass of forest—a dome of blossom suddenly created as if by magic. The birds were all active; from the wild-fruit trees, not far off, we often heard the shrill yelping of the Toucans (*Rhamphastos vitellinus*). Small flocks of parrots flew over on most mornings, at a great height, appearing in distinct relief against the blue sky, always two by two, chattering to each other, the pairs being separated by regular intervals; their bright colours, however, were not apparent at that height. After breakfast we devoted the hours from 10 a.m. to 2 or 3 p.m. to entomology; the best time for insects in the forest being a little before the greatest heat of the day. We did not find them at all numerous, although of great variety as to species. . . . After several years' observation, I came to the conclusion that the increase of these creatures was checked by the close persecution of insectivorous animals, which

are excessively numerous in this country. The check operates at all periods of life—on the eggs, the larvae, and the perfect insects.

The heat increased rapidly towards two o'clock (92° and 93° Fahr.), by which time every voice of bird or mammal was hushed ; only in the trees was heard at intervals the harsh whirr of a cicada. The leaves, which were so moist and fresh in early morning, now became lax and drooping ; the flowers shed their petals. Our neighbours, the Indian and Mulatto inhabitants of the open palm-thatched huts, as we returned home fatigued with our ramble, were either asleep in their hammocks or seated on mats in the shade, too languid even to talk. On most days in June and July a heavy shower would fall some time in the afternoon, producing a most welcome coolness. The approach of the rain-clouds was after a uniform fashion, very interesting to observe. First, the cool sea-breeze, which commenced to blow about 10 o'clock, and which had increased in force with the increasing power of the sun, would flag and finally die away. The heat and electric tension of the atmosphere would then become almost insupportable. Languor and uneasiness would seize on every one ; even the denizens of the forest betraying it by their motions. White clouds would appear in the east and gather into cumuli, with an increasing blackness along their lower portions. The whole eastern horizon would become almost suddenly black, and this would spread upwards, the sun at length becoming obscured. Then the rush of a mighty wind is heard through the forest, swaying the tree-tops ; a vivid flash of lightning bursts forth, then a crash of thunder, and down streams the deluging rain. Such storms soon cease, leaving

bluish-black motionless clouds in the sky until night. Meantime all nature is refreshed ; but heaps of flower-petals and fallen leaves are seen under the trees. Towards evening life revives again, and the ringing uproar is resumed from bush and tree. The following morning the sun again rises in a cloudless sky, and so the cycle is completed ; spring, summer, and autumn, as it were, in one tropical day. . . .

In Europe, a woodland scene has its spring, its summer, its autumnal, and its winter aspects. In the equatorial forests the aspect is the same or nearly so every day in the year : budding, flowering, fruiting, and leaf-shedding are always going on in one species or other. The activity of birds and insects proceeds without interruption, each species having its own separate times ; the colonies of wasps, for instance, do not die off annually, leaving only the queens, as in cold climates ; but the succession of generations and colonies goes on incessantly. It is never either spring, summer, or autumn, but each day is a combination of all three. With the day and night always of equal length, the atmospheric disturbances of each day neutralising themselves before each succeeding morn ; with the sun in its course proceeding mid-way across the sky, and the daily temperature the same within two or three degrees throughout the year—how grand in its perfect equilibrium and simplicity is the march of Nature under the equator !

HENRY WALTER BATES, *A Naturalist on the Amazons.*

## THE RHYTHM OF LIFE

THE climatic changes in the tropics are at a minimum both in the hot, damp forests and on the desert tracts of Africa, Asia, and America. The changes of season are but very slightly marked. Hence the activities of plants and animals proceed all the year round without the interruptions caused by the hot and cold seasons of more temperate zones. Trees in the tropics make no annual growth-rings. Nevertheless there is a periodicity, a rhythmic alternation of periods of repose and activity. Certain plants and animals as a whole show little of this periodicity, but even these have resting periods for certain of their functions. The less the periodicity of the climate is, the less is the plant dependent on it, and such alternations of rest and activity in a uniform climate are in the main due to internal causes. In the densest and most humid tropical forests there is a time for breeding and a time for vegetative recovery. But this may not affect all the plants of one species at the same time, and hence one finds that a given species is in bloom for long periods of time even during the whole year, although each individual specimen may only flower for a few days, or, at the outside, for a few weeks. Where the climatic change is slight, trees often shed their leaves at longer or shorter intervals, sometimes as often as six times a year, sometimes only once; and this process is independent of the seasons of the year, so that trees of the same species under the same conditions drop their leaves and acquire new ones at times that do not coincide. This is carried in some cases even further,

for we find that in certain trees, for example the orange-tree, the individual branches have become independent of one another, so that on the same tree winter, spring, summer and autumn shoots may be found on different branches. Flowers and fruit may be found at the same time on a tree but on different branches. Plants that live in desert areas have a special adaptation for storing water, and they show a certain irregular periodicity in their size, which is dependent on rare and infrequent rainfall.

Although there is no winter or summer, spring or autumn, in the tropics, both plants and animals are subject to the periodical rise and fall of the sun and the monthly waxing and waning of the moon. But there is another immense area—and a very densely populated area—of the habitable globe, where even these periodicities are eliminated. In the depths of the sea, two or three thousand fathoms below the surface, we find a very large population of marine animals, and the conditions under which they live are extraordinarily uniform.

Below about three hundred fathoms the light and heat of the sun hardly penetrate. Hence, no green plants can live below this limit. Diatoms and algæ, which form so large a proportion of the living matter at the surface, cannot live in the absence of sunlight. But the depths are peopled by very large numbers of species of animals of all sorts, and no part of the sea contains a denser population. These deep-sea animals live to some extent on each other, but like other creatures they cannot be self-supporting. They cannot subsist as the inhabitants of the Bermudas, who were said to subsist by 'taking in one another's washing.'

Like the inhabitants of great cities, the dwellers in the depths must have an outside food supply, and this ultimately comes from the surface or from the numerous animals which, living in the middle waters, die and fall to the bottom. Others, members of the middle region fauna, again, may swim down there and be caught. There is a wonderful uniformity in the state of things at the bottom of the deep blue sea. Climate plays no part in the life of the depths; storms do not ruffle their inhabitants; these recognize no alternation of day or night; seasons are unknown to them; they experience no change of temperature. Although the abysmal depths of the polar regions might be expected to be far colder than those of the tropics, the difference only amounts to a degree or so—a difference which would not be perceptible to us without instruments of precision.

At the bottom of the sea there is no sound—  
There is no sound, no echo of sound, in the deserts of the  
deep,  
On the great grey level plains of ooze where the shell-blurred  
cables creep.

The world down there is cold and still and motionless. The numerous inhabitants of the depths are uninfluenced by the daily rise and setting of the sun, the monthly movement of the moon, the succession of the seasons. Each of them might exclaim with our great epic poet :

Thus with the Year  
Seasons return, but not to me returns  
Day, or the sweet approach of Ev'n or Morn,  
Or sight of vernal bloom, or Summer's Rose.

SIR ARTHUR E. SHIPLEY, *Life*.

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## VIII

### THE SUMMERS OF 1781 AND 1783

THE summers of 1781 and 1783 were unusually hot and dry ; to them therefore I shall turn back in my journals, without recurring to any more distant period. In the former of these years my peach and nectarine trees suffered so much from the heat that the rind on the bodies was scalded and came off ; since which the trees have been in a decaying state. This may prove a hint to assiduous gardeners to fence and shelter their wall-trees with mats or boards, as they may easily do, because such annoyance is seldom of long continuance. During that summer also, I observed that my apples were coddled, as it were, on the trees ; so that they had no quickness of flavour, and would not keep in the winter. This circumstance put me in mind of what I had heard travellers assert, that they never ate a good apple or apricot in the south of Europe, where the heats were so great as to render the juices vapid and insipid.

The great pests of a garden are wasps, which destroy all the finer fruits just as they are coming into perfection. In 1781 we had none ; in 1783 there were myriads, which would have devoured all the produce of my garden, had not we set the boys to take the nests, and caught thousands with hazel-twigs tipped with bird-lime : we have since employed the boys to take

coddled] parboiled, stewed.

and destroy the large breeding wasps in the spring. Such expedients have a great effect on these marauders, and will keep them under. Though wasps do not abound but in hot summers, yet they do not prevail in every hot summer, as I have instanced in the two years above-mentioned.

In the sultry season of 1783, honey-dews were so frequent as to deface and destroy the beauties of my garden. My honey-suckles, which were one week the most sweet and lovely objects that the eye could behold, became the next the most loathsome ; being enveloped in a viscous substance and loaded with black aphides, or smother-flies. The occasion of this clammy appearance seems to be this, that in hot weather the effluvia of flowers in fields and meadows and gardens are drawn up in the day by a brisk evaporation, and then in the night fall down again with the dews, with which they are entangled ; that the air is strongly scented, and therefore impregnated with the particles of flowers in summer weather, our senses will inform us ; and that this clammy sweet substance is of the vegetable kind we may learn from bees, to whom it is very grateful : and we may be assured that it falls in the night, because it is always first seen in warm still mornings.

On chalky and sandy soils, and in the hot villages about London, the thermometer has been often observed to mount as high as  $83^{\circ}$  or  $84^{\circ}$  ; but with us, in this hilly and woody district, I have hardly ever seen it exceed  $80^{\circ}$ , nor does it often arrive at that pitch. The reason, I conclude, is, that our dense clayey soil, so much shaded by trees, is not so easily heated through as those above-mentioned ; and, besides, our mountains cause currents of air and breezes ; and the vast

effluvia from our woodlands temper and moderate our heats.

The summer of the year 1783 was an amazing and portentous one, and full of horrible phenomena; for, besides the alarming meteors and tremendous thunderstorms that affrighted and distressed the different counties of this kingdom, the peculiar haze or smoky fog, that prevailed for many weeks in this island, and in every part of Europe, and even beyond its limits, was a most extraordinary appearance, unlike anything known within the memory of man. By my journal I find that I had noticed this strange occurrence from June 23rd to July 20th inclusive, during which period the wind varied to every quarter without making any alteration in the air. The sun, at noon, looked as blank as a clouded moon, and shed a rust-coloured ferruginous light on the ground, and floors of rooms; but was particularly lurid and blood-coloured at rising and setting. All the time the heat was so intense that butchers' meat could hardly be eaten on the day after it was killed; and the flies swarmed so in the lanes and hedges that they rendered the horses half frantic, and riding irksome. The country people began to look with a superstitious awe at the red, louring aspect of the sun; and indeed there was reason for the most enlightened person to be apprehensive; for, all the while, Calabria and part of the isle of Sicily were torn and convulsed with earthquakes; and about that juncture a volcano sprang out of the sea on the coast of Norway. On this occasion Milton's noble simile of the sun, in his first book of *Paradise Lost*, frequently occurred to my mind; and it is indeed particularly applicable, because, towards the end, it alludes to a superstitious kind of

dread, with which the minds of men are always impressed by such strange and unusual phenomena :

As when the sun, new risen,  
Looks through the horizontal, misty air,  
Shorn of his beams ; or from behind the moon,  
In dim eclipse, disastrous twilight sheds  
On half the nations, and with fear of change  
Perplexes monarchs.

GILBERT WHITE, *Natural History of Selborne*.

NOTE.—The strange weather of 1783 was undoubtedly connected with the eruption of Skapta Jokul in June of that year. See the extract entitled ' Hecla and Skapta Jokul ' in Section VI.

## WEATHER SIGNS

ONE night, at the end of August, when Bathsheba's experiences as a married woman were still new, and when the weather was yet dry and sultry, a man stood motionless in the stackyard of Weatherbury Upper Farm, looking at the moon and sky.

The night had a sinister aspect. A heated breeze from the south slowly fanned the summits of lofty objects, and in the sky dashes of buoyant cloud were sailing in a course at right angles to that of another stratum, neither of them in the direction of the breeze below. The moon, as seen through these films, had a lurid metallic look. The fields were fallow with the impure light, and all were tinged in monochrome, as if beheld through stained glass. The same evening the sheep had trailed homeward head to tail, the behaviour of the rooks had been confused, and the horses had moved with timidity and caution.

Thunder was imminent, and, taking some secondary

appearances into consideration, it was likely to be followed by one of the lengthened rains which mark the close of dry weather for the season. Before twelve hours had passed a harvest atmosphere would be a bygone thing.

Oak gazed with misgiving at eight naked and unprotected ricks, massive and heavy with the rich produce of one-half of the farm for that year. He went on to the barn.

. . . . .

Gabriel proceeded towards his home. In approaching the door, his toe kicked something which felt and sounded soft, leathery, and distended, like a boxing-glove. It was a large toad humbly travelling across the path. Oak took it up, thinking it might be better to kill the creature to save it from pain; but finding it uninjured, he placed it again among the grass. He knew what this direct message from the Great Mother meant. And soon came another.

When he struck a light indoors there appeared upon the table a thin glistening streak, as if a brush of varnish had been lightly dragged across it. Oak's eyes followed the serpentine sheen to the other side, where it led up to a huge brown garden-slug, which had come indoors to-night for reasons of its own. It was Nature's second way of hinting to him that he was to prepare for foul weather.

Oak sat down meditating for nearly an hour. During this time two black spiders, of the kind common in thatched houses, promenaded the ceiling, ultimately dropping to the floor. This reminded him that if there was one class of manifestation on this matter that he thoroughly understood, it was the instincts of sheep.

He left the room, ran across two or three fields towards the flock, got upon a hedge, and looked over among them.

They were crowded close together on the other side around some furze bushes, and the first peculiarity observable was that, on the sudden appearance of Oak's head over the fence, they did not stir or run away. They had now a terror of something greater than their terror of man. But this was not the most noteworthy feature : they were all grouped in such a way that their tails, without a single exception, were turned towards that half of the horizon from which the storm threatened. There was an inner circle closely huddled, and outside these they radiated wider apart, the pattern formed by the flock as a whole not being unlike a vandyked lace collar, to which the clump of furze-bushes stood in the position of a wearer's neck.

This was enough to re-establish him in his original opinion. He knew now that he was right, and that Troy was wrong. Every voice in Nature was unanimous in bespeaking change. But two distinct translations attached to these dumb expressions. Apparently there was to be a thunder-storm, and afterwards a cold continuous rain. The creeping things seemed to know all about the later rain, but little of the interpolated thunder-storm, whilst the sheep knew all about the thunder-storm and nothing of the later rain.

This complication of weathers being uncommon, was all the more to be feared. Oak returned to the stack-yard. All was silent here, and the conical tips of the ricks jutted darkly into the sky. There were five wheat-ricks in this yard, and three stacks of barley. The wheat when threshed would average about thirty



quarters to each stack; the barley, at least forty. Their value to Bathsheba, and indeed to anybody, Oak mentally estimated by the following simple calculation :

5 × 30 = 150 quarters	-	-	-	-	500 <i>l.</i>
3 × 40 = 120 quarters	-	-	-	-	250 <i>l.</i>
					<hr/>
Total	-	-	-	-	750 <i>l.</i>

Seven hundred and fifty pounds in the divinest form that money can wear—that of necessary food for man and beast : should the risk be run of deteriorating this bulk of corn to less than half its value, because of the instability of a woman ? ‘ Never, if I can prevent it ! ’ said Gabriel.

THOMAS HARDY, *Far from the Madding Crowd*.

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## THE RULER OF THE WEST

THE West Wind reigns over the seas surrounding the coasts of these kingdoms ; and from the gateways of the channels, from promontories as if from watch-towers, from estuaries of rivers as if from postern gates, from passage-ways, inlets, straits, firths, the garrison of the Isle and the crews of the ships going and returning look to the westward to judge by the varied splendours of his sunset mantle the mood of that arbitrary ruler. The end of the day is the time to gaze at the kingly face of the Westerly Weather, who is the arbiter of ships’ destinies. Benignant and splendid, or splendid and sinister, the western sky reflects the hidden purposes of the royal mind. Clothed in a mantle of dazzling gold or draped in rags of black clouds like a

beggar, the might of the Westerly Wind sits enthroned upon the western horizon with the whole North Atlantic as a footstool for his feet and the first twinkling stars making a diadem for his brow. Then the seamen, attentive courtiers of the weather, think of regulating the conduct of their ships by the mood of the master. The West Wind is too great a king to be a dissembler : he is no calculator plotting deep schemes in a sombre heart ; he is too strong for small artifices ; there is passion in all his moods, even in the soft mood of his serene days, in the grace of his blue sky whose immense and unfathomable tenderness reflected in the mirror of the sea embraces, possesses, lulls to sleep the ships with white sails. He is all things to all oceans ; he is like a poet seated upon a throne—magnificent, simple, barbarous, pensive, generous, impulsive, changeable, unfathomable—but when you understand him, always the same. Some of his sunsets are like pageants devised for the delight of the multitude, when all the gems of the royal treasure-house are displayed above the sea. Others are like the opening of his royal confidence, tinged with thoughts of sadness and compassion in a melancholy splendour meditating upon the short-lived peace of the waters. And I have seen him put the pent-up anger of his heart into the aspect of the inaccessible sun, and cause it to glare fiercely like the eye of an implacable autocrat out of a pale and frightened sky.

He is the war-lord who sends his battalions of Atlantic rollers to the assault of our seaboard. The compelling voice of the West Wind musters up to his service all the might of the ocean. At the bidding of the West Wind there arises a great commotion in the sky above these Islands, and a great rush of waters falls upon our shores.



‘The compelling voice of the West Wind’  
The Wolf Lighthouse, Scilly Isles

The sky of the westerly weather is full of flying clouds, of great big white clouds coming thicker and thicker till they seem to stand welded into a solid canopy, upon whose grey face the lower wrack of the gale, thin, black, and angry-looking, flies past with vertiginous speed. Denser and denser grows this dome of vapours, descending lower and lower upon the sea, narrowing the horizon around the ship. And the characteristic aspect of westerly weather, the thick, grey, smoky, and sinister tone sets in, circumscribing the view of the men, drenching their bodies, oppressing their souls, taking their breath away with booming gusts, deafening, blinding, driving, rushing them onwards in a swaying ship towards our coasts lost in mists and rain.

The caprice of the winds, like the wilfulness of men, is fraught with the disastrous consequences of self-indulgence. Long anger, the sense of his uncontrolled power, spoils the frank and generous nature of the West Wind. It is as if his heart were corrupted by a malevolent and brooding rancour. He devastates his own kingdom in the wantonness of his force. South-west is the quarter of the heavens where he presents his darkened brow. He breathes his rage in terrific squalls, and overwhelms his realm with an inexhaustible welter of clouds. He strews the seeds of anxiety upon the decks of scudding ships, makes the foam-stripped ocean look old, and sprinkles with grey hairs the heads of shipmasters in the homeward-bound ships running for the Channel. The Westerly Wind asserting his sway from the south-west quarter is often like a monarch gone mad, driving forth with wild imprecations the most faithful of his courtiers to shipwreck, disaster, and death.

The south-westerly weather is the thick weather *par excellence*. It is not the thickness of the fog; it is rather a contraction of the horizon, a mysterious veiling of the shores with clouds that seem to make a low vaulted dungeon around the running ship. It is not blindness; it is a shortening of the sight. The West Wind does not say to the seaman, 'You shall be blind'; it restricts merely the range of his vision and raises the dread of land within his breast. It makes of him a man robbed of half his force, of half his efficiency. Many times in my life, standing in long sea-boots and streaming oilskins at the elbow of my commander on the poop of a homeward-bound ship making for the Channel, and gazing ahead into the grey and tormented waste, I have heard a weary sigh shape itself into a studiously casual comment :

'Can't see very far in this weather.'

And have made answer in the same low, perfunctory tone :

'No, sir.'

It would be merely the instinctive voicing of an ever-present thought associated closely with the consciousness of the land somewhere ahead and of the great speed of the ship. Fair wind, fair wind ! Who would dare to grumble at a fair wind ? It was a favour of the Western King, who rules masterfully the North Atlantic from the latitude of the Azores to the latitude of Cape Farewell. A famous shove this to end a good passage with ; and yet, somehow, one could not muster upon one's lips the smile of a courtier's gratitude. This favour was dispensed to you from under an overbearing scowl, which is the true expression of the great autocrat when he has made up his mind to give a battering to

some ships and to hunt certain others home in one breath of cruelty and benevolence, equally distracting.

‘No, sir. Can’t see very far.’

Thus would the mate’s voice repeat the thought of the master, both gazing ahead, while under their feet the ship rushes at some twelve knots in the direction of the lee shore; and only a couple of miles in front of her swinging and dripping jib-boom, carried naked with an upward slant like a spear, a grey horizon closes the view with a multitude of waves surging upwards violently as if to strike at the stooping clouds.

Awful and threatening scowls darken the face of the West Wind in his clouded, south-west mood; and from the King’s throne-hall in the western board stronger gusts reach you, like the fierce shouts of raving fury to which only the gloomy grandeur of the scene imparts a saving dignity. A shower pelts the deck and the sails of the ship as if flung with a scream by an angry hand; and when the night closes in, the night of a south-westerly gale, it seems more hopeless than the shade of Hades. The south-westerly mood of the great West Wind is a lightless mood, without sun, moon, or stars, with no gleam of light but the phosphorescent flashes of the great sheets of foam that, boiling up on each side of the ship, fling bluish gleams upon her dark and narrow hull, rolling as she runs, chased by enormous seas, distracted in the tumult.

There are some bad nights in the kingdom of the West Wind for homeward-bound ships making for the Channel; and the days of wrath dawn upon them colourless and vague like the timid turning up of invisible lights upon the scene of a tyrannical and passionate outbreak, awful in the monotony of its method



and the increasing strength of its violence. It is the same wind, the same clouds, the same wildly racing seas, the same thick horizon around the ship. Only the wind is stronger, the clouds seem denser and more overwhelming, the waves appear to have grown bigger and more threatening during the night. The hours, whose minutes are marked by the crash of the breaking seas, slip by with the screaming, pelting squalls overtaking the ship as she runs on and on with darkened canvas, with streaming spars and dripping ropes. The downpours thicken. Preceding each shower a mysterious gloom, like the passage of a shadow above the firmament of grey clouds, filters down upon the ship. Now and then the rain pours upon your head in streams as if from spouts. It seems as if your ship were going to be drowned before she sank, as if all atmosphere had turned to water. You gasp, you splutter, you are blinded and deafened, you are submerged, obliterated, dissolved, annihilated, streaming all over as if your limbs, too, had turned to water. And every nerve on the alert you watch for the clearing-up mood of the Western King, that shall come with a shift of wind as likely as not to whip all the three masts out of your ship in the twinkling of an eye.

Heralded by the increasing fierceness of the squalls, sometimes by a faint flash of lightning like the signal of a lighted torch waved far away behind the clouds, the shift of wind comes at last, the crucial moment of the change from the brooding and veiled violence of the south-west gale to the sparkling, flashing, cutting, clear-eyed anger of the King's north-westerly mood. You behold another phase of his passion, a fury bejewelled with stars, mayhap bearing the crescent of the

moon on its brow, shaking the last vestiges of its torn-cloud-mantle in inky-black squalls, with hail and sleet descending like showers of crystals and pearls, bounding off the spars, drumming on the sails, pattering on the oilskin coats, whitening the decks of homeward-bound ships. Faint, ruddy flashes of lightning flicker in the starlight upon her mast-heads. A chilly blast hums in the taut rigging, causing the ship to tremble to her very keel, and the soaked men on her decks to shiver in their wet clothes to the very marrow of their bones. Before one squall has flown over to sink in the eastern board, the edge of another peeps up already above the western horizon, racing up swift, shapeless, like a black bag full of frozen water ready to burst over your devoted head. The temper of the ruler of the ocean has changed. Each gust of the clouded mood that seemed warmed by the heat of a heart flaming with anger has its counterpart in the chilly blasts that seem blown from a breast turned to ice with a sudden revulsion of feeling. Instead of blinding your eyes and crushing your soul with a terrible apparatus of clouds and mists and seas and rain, the King of the West turns his power to contemptuous pelting of your back with icicles, to making your weary eyes water as if in grief and your worn-out carcase quake pitifully. But each mood of the great autocrat has its own greatness, and each is hard to bear. Only the north-west phase of that mighty display is not demoralizing to the same extent, because between the hail and sleet squalls of a north-westerly gale one can see a long way ahead.

To see ! to see !—this is the craving of the sailor, as of the rest of blind humanity. To have his path made clear for him is the aspiration of every human being in

our beclouded and tempestuous existence. I have heard a reserved, silent man, with no nerves to speak of after three days of hard running in thick south-westerly weather, burst out passionately : ' I wish to God we could get sight of something ! '

JOSEPH CONRAD, *The Mirror of the Sea*.

By kind permission of Messrs. Methuen & Co.

## ODE TO THE WEST WIND

### I

O WILD West Wind, thou breath of Autumn's being,  
Thou, from whose unseen presence the leaves dead  
Are driven, like ghosts from an enchanter fleeing,

Yellow, and black, and pale, and hectic red,  
Pestilence-stricken multitudes : O thou,  
Who chariotest to their dark wintry bed

The wingèd seeds, where they lie cold and low,  
Each like a corpse within its grave, until  
Thine azure sister of the Spring shall blow

Her clarion o'er the dreaming earth, and fill  
(Driving sweet buds like flocks to feed in air)  
With living hues and odours plain and hill :

Wild Spirit, which art moving everywhere  
Destroyer and preserver ; hear, oh, hear !

### II

Thou on whose stream, mid the steep sky's commotion,  
Loose clouds like earth's decaying leaves are shed,  
Shook from the tangled boughs of Heaven and Ocean,

Angels of rain and lightning : there are spread  
On the blue surface of thine æry surge,  
Like the bright hair uplifted from the head

Of some fierce Maenad, even from the dim verge  
Of the horizon to the zenith's height,  
The locks of the approaching storm. Thou dirge

Of the dying year, to which this closing night  
Will be the dome of a vast sepulchre,  
Vaulted with all thy congregated might

Of vapours, from whose solid atmosphere  
Black rain, and fire, and hail will burst : oh, hear !

## III

Thou who didst waken from his summer dreams  
The blue Mediterranean, where he lay,  
Lulled by the coil of his crystalline streams,

Beside a pumice isle in Baiae's bay,  
And saw in sleep old palaces and towers  
Quivering within the wave's intenser day,

All overgrown with azure moss and flowers  
So sweet, the sense faints picturing them ! Thou  
For whose path the Atlantic's level powers

Cleave themselves into chasms, while far below  
The sea-blooms and the oozy woods which wear  
The sapless foliage of the ocean, know

Thy voice, and suddenly grow gray with fear,  
And tremble and despoil themselves : oh, hear !

## IV

If I were a dead leaf thou mightest bear ;  
If I were a swift cloud to fly with thee ;  
A wave to pant beneath thy power, and share



‘ SOME FIERCE MAENAD ’

The impulse of thy strength, only less free  
Than thou, O uncontrollable ? If even  
I were as in my boyhood, and could be

The comrade of thy wanderings over Heaven,  
As then, when to outstrip thy skiey speed  
Scarce seemed a vision ; I would ne'er have striven

As thus with thee in prayer in my sore need.  
Oh, lift me as a wave, a leaf, a cloud !  
I fall upon the thorns of life ! I bleed !

A heavy weight of hours has changed and bowed  
One too like thee : tameless, and swift, and proud.

## v

Make me thy lyre, even as the forest is :  
What if my leaves are falling like its own !  
The tumult of thy mighty harmonies

Will take from both a deep, autumnal tone,  
Sweet though in sadness. Be thou, Spirit fierce,  
My spirit ! Be thou me, impetuous one !

Drive my dead thoughts over the universe  
Like withered leaves to quicken a new birth !  
And, by the incantation of this verse,

Scatter, as from an unextinguished hearth  
Ashes and sparks, my words among mankind !  
Be through my lips to unawakened earth

The trumpet of a prophecy ! O, Wind,  
If Winter comes, can Spring be far behind ?

PERCY BYSSHE SHELLEY.

NOTE.—Are the ‘old palaces and towers’ reflected or submerged ? See Shelley’s description of his excursion to Baiae in the extract entitled ‘Vesuvius’ in Section VI.



## THE DARK COMPANION OF ALGOL

ASTRONOMY is usually thought of as the study of the bodies visible in the sky. And such it largely is when the present state of the universe alone is considered. But when we attempt to peer into its past and to foresee its future, we find ourselves facing a new side of the heavens—the contemplation of the invisible there. For in the evolution of worlds not simply must the processes be followed by the mind's eye, so short the span of human life, but they begin and end in what we cannot see. What the solar system sprang from, and what it will eventually become, is alike matter devoid of light. Out of darkness into darkness again : such are the bourns of cosmic action.

The stars are suns ; past, present, or potential. Each of those diamond points we mark studding the heavens on a winter's night are globes comparable with, and in many cases greatly excelling, our own ruler of the day. The telescope discloses myriads more. Yet these self-confessed denizens of space form but a fraction of its occupants. Quite as near, and perhaps much nearer, are orbs of which most of us have no suspicion. Unimpressing our senses and therefore ignored by our minds, bodies people it which, except for rare occurrences, remain forever invisible. For dark stars in countless numbers course hither and thither throughout the universe at speeds as stupendous as the lucent ones themselves.

Had we no other knowledge of them, reasoning would suffice to demonstrate their existence. It is the logic of unlimited subtraction. Every self-shining

star is continually giving out light and heat. Now such an expenditure cannot go on for ever, as the source of its replenishing by contraction, accretion, or disintegration is finite. Long to our measures of time as the process may last, it must eventually have an end and the star finally becomes a cold dark body pursuing as before its course, but in itself inert and dead; an orb grown *orbéd*, in the old French sense. So it must remain unless some cosmic catastrophe rekindle it to life. The chance of such occurrence in a given time compared with the duration of the star's light-emitting career will determine the number of dark stars relative to the lucent ones. The chance is undoubtedly small, and the number of dark bodies in space proportionately large. Reasoning, then, informs us first that such bodies must exist all about us, and second that their multitude must be great.

Valid as this reasoning is, however, we are not left to inference for our knowledge of them. There is a certain star amid the polar constellations known as Algol,—el Ghoul, the Arabs call it, or The Daemon. The name shows they noticed how it winked its eye and recognized something sarcastically sinister in its intent. For once in two days and twenty hours its light fades to one-third of its usual amount, remains thus for about twenty minutes, and then slowly regains its brightness. Seemingly unmoved itself, its steady blinking from the time man first observed it took on an uncanniness to be felt. To untelescoped man it certainly seems demonical, this punctual recurrent wink. Spectroscoped man has learnt its cause.

Goodricke in 1795 divined it, and research since has confirmed his keen intuition. Its loss of light is

occasioned by the passing in front of it of a dark companion almost of its own size revolving about it in a close elliptic orbit. That this is the explanation of its strange behaviour, the shift of its spectral lines makes certain, by showing that the bright star is receding from us at twenty-seven miles a second seventeen hours before the eclipse and coming towards us at the same rate seventeen hours after it; its dark companion, therefore, doing the reverse.

Algol is no solitary specimen of a mind-seen invisible star. Many eclipsing binaries of the same class are now known; and considering that the phenomenon could not be disclosed unless the orbital plane of the pair traversed the observer's eye, an unlikely chance in a fortuitous distribution, we perceive how many such in truth there must be which escape recognition for their tilt.

But if dark stars exist in connection with lucent ones, there must be many more that travel alone. Our own Sun is an instance in embryo. If he live long enough, he will become such a solitary shrouded tramp in his old age. For he has no companion to betray him. The only way in which we could become cognizant of these wanderers would be by their chance collision with some other star, dark or lucent as the case might be. The impact of the catastrophe would generate so much light and heat that the previously dark body would be converted into a blazing sun and a new star make its advent in the sky.

Star births of the sort have actually been noted. Every now and then a new star suddenly appears in the firmament—a nova as it is technically called. These apparitions date from the dawn of astronomic

history. The earliest chronicled is found in the Chinese Annals of 134 B.C. It shone out in Scorpio and was probably the new star which Pliny tells us incited Hipparchus, 'The Father of Astronomy,' to make his celebrated catalogue of stars. From this time down we have recorded instances of like character.

One of the most famous was the 'Pilgrim Star' of Tycho Brahe. That astronomer has left us a full account of it. 'While I was living,' he tells us, 'with my uncle in the monastery of Hearitzwadt, on quitting my chemical laboratory one evening, I raised my eyes to the well-known vault of heaven and observed, with indescribable astonishment, near the zenith, in Cassiopeia, a radiant fixed star of a magnitude never before seen.'

PERCIVAL LOWELL, *The Evolution of Worlds.*

By kind permission of Messrs. Macmillan & Co.

## TRIUMPHS OF ASTRONOMY

WHAT was Alexander's subduing of Asia, or that  
Sheep-worry of Europe, when pigmy Napoleon enter'd  
Her sovereign chambers, and her kings with terror  
eclips'd ?

His footsore soldiers inciting across the ravag'd plains,  
Thro' bloody fields of death tramping to an ugly  
disaster ?

Shows any crown, set above the promise (so rudely  
accomplisht)

Of their fair godlike young faces, a glory to compare  
With the immortal olive that circles bold Galileo's  
Brows, the laurel'd halo of Newton's unwithering  
fame ?



AN OBSERVATORY IN 1587 WITH ASTRONOMICAL INSTRUMENTS

Or what a child's surmise, how trifling a journey  
 Columbus  
 Adventur'd, to a land like that which he sail'd from  
 arriving,  
 If compar'd to Bessel's magic divination, awarding  
 Magnificent Sirius his dark and invisible bride ;  
 Or when Adams by Cam, (more nearly Leverrier in  
 France,)  
 From the minutely measur'd vacillation of Uranus,  
 augur'd  
 Where his mighty brother Neptune went wandering  
 unnamed,  
 And thro' those thousand-million league-darknesses of  
 space  
 Drew him slowly whene'er he pass'd, and slowly released  
 him !  
*Nil admirari !* 'Tis surely a most shabby thinker  
 Who, looking on Nature, finds not the reflection  
 appalling.

ROBERT BRIDGES.

By kind permission of the author and Sir John Murray.

NOTE.—The 'dark star' that companions Sirius was not actually observed till 1862 ; but its existence had been mathematically proved by the Prussian astronomer Bessel in 1834. Similarly from the perturbations of Uranus, Adams in Cambridge and Leverrier in Paris independently predicted the existence of a planet still more remote.

## THE VELOCITY OF LIGHT

THE velocity of light had been determined more than two centuries before Hertz measured the velocity of electric waves. It would be difficult to explain the exact method without mathematics, but the following may give some idea. Nearly two hundred and fifty years



ago astronomers noticed an apparent irregularity in the movements of one of Jupiter's satellites. Astronomers made time-tables showing where the satellite would be at certain times, but the satellite did not behave as it was expected to do. At one period of the year it was fully a quarter of an hour behind the scheduled time which it had kept six months previously. Here was a puzzle for these astronomers. No one could suppose that the satellite fell off in speed at one time of the year and returned to its original speed six months later. Yet the fact remained that when this satellite disappeared behind its great planet, it was sometimes sixteen minutes and thirty-six seconds late in reappearing. It was well known that Jupiter was a very long way off from us—nearly five hundred million miles—but no matter how long light might take to travel from Jupiter to our Earth, surely it must always take the same time. It would do so provided the distance between Jupiter and the Earth was always the same. But these astronomers of the seventeenth century knew that this distance was not always the same. While Jupiter made one majestic march, in its far-distant orbit, around the Sun, the Earth made nearly one dozen complete circuits of its smaller orbit. Therefore at one period of our year we should be nearer Jupiter than we should be six months later. When we are at the farthest side of our orbit away from Jupiter, its light will have to travel the additional distance across our orbit, which it will not have to do when we are at the point of our orbit nearest to Jupiter. We all know that we are about 93 million miles from the Sun, so that the diameter of our orbit will be twice that distance, or 186 million miles. We have seen that

these astronomers found by observation that Jupiter's satellite was *apparently* sixteen minutes and thirty-six seconds late, so it was quite clear to them that the light from Jupiter took that time to cross the Earth's orbit. This time is practically equal to 1000 seconds, and during that time light has travelled 186 million miles, so we need not trouble about pencil and paper to calculate how far light will travel in one second. We have simply to strike off the last three ciphers of the 186,000,000 miles, and we find that light travels 186,000 miles per second. This is such an enormous speed that light appears to travel instantaneously from any one point upon our planet to another distant point on it.

It is interesting to know that Galileo tried to measure the velocity of light by covering and uncovering lamps at a distance, but, as we should expect, no result could be obtained. Nevertheless it has been found possible to devise methods of measuring the velocity of light by direct experiment. Without troubling about much detail, it is of interest to note the principle of one such experiment. An aperture is very suddenly opened and closed so that a beam of light can shoot out through the aperture, fall upon a mirror at a fixed distance, and be reflected back again to the aperture, where it can enter and be observed through an eye-piece. If light were transmitted instantaneously, the reflected beam could always re-enter the aperture, no matter how rapidly it was closed. A simple means of opening and closing the aperture very rapidly was devised. Picture a disc with a row of small holes cut in it around its outer edge; a toothed wheel is what is actually used. This disc is so arranged that the holes pass across in front of the aperture in succession. If the disc is

revolved at a high speed we shall have the aperture opened and closed with exceeding rapidity. If the light takes any time at all to travel from the aperture to the mirror and back again, we should find that at a certain speed of rotation of the disc the light wave would arrive back at the aperture at the moment it was closed. No light would be observed to enter the eyepiece when this was the case. Then if the speed of rotation be increased till the reflected light succeeds in entering the aperture by the hole which follows the one from which it escaped, it will be clear that it took the light just as long to travel from the aperture to the mirror and back again as it took the edge of the disc to travel the distance from one hole to the following hole. A simple calculation from the speed of rotation of the disc will give the time required for this very small movement of the disc. We therefore know how long it took the light to travel the measured distance between the aperture and the mirror. This turns out to be exactly equal to a speed of 186,000 miles per second. Several experimenters have devised other means of measuring the velocity of light, and all the results fall within 185 and 186 thousand miles per second.

Having satisfied ourselves that there is no guesswork about the stated velocity of light, it will be of interest to see how it is possible to measure the length of those waves which are said to be only about one thirty-thousandth part of an inch. One might think that this could only be understood by those who can think in pure mathematics, but fortunately this is not the case. It will be remembered that Dr. Thomas Young, the first Professor of Natural Philosophy in the Royal Institution, London, was one of the pioneers of the

electro-magnetic theory of light. One of his famous experiments was to show that two light waves could so interfere with each other that they caused darkness. Young took a very narrow beam of light of one colour—say, red—so that all the æther waves would be of the same length. He placed an obstructing screen in the path of this red beam, and only allowed the light to pass through two small holes placed very close together in the screen. Therefore from the back of the screen two small beams of red light proceed from two points very close together. The light from these is made to fall upon a white screen, and one would expect to find a patch of red colour made up of the two beams of red light coming through the two holes. However, Young found something more than that. The image upon the screen was made up of alternate red bands and dark bands, or in other words, bands of darkness. When either of the two small holes was closed the image on the screen was merely a patch of solid red, but as long as light passed through both holes these bands of darkness were present. Young used the result of this experiment as a proof of the wave theory of light. If Newton's corpuscular theory were correct, then two beams of luminous particles added together should only give an enhanced luminosity. In other words, if you add something to something the result cannot be nothing. If, however, the two beams of light were not composed of material particles, but were merely wave motion in some medium, it was quite understandable that one wave might so interfere with another as to produce these bands of darkness at their meeting point.

It was by means of this same simple experiment that Young was able to measure the wave-length of orange-

red light. Picture a single train of waves passing through No. 1 hole and striking the screen at a point directly opposite it, while another train of waves passes through No. 2 hole and strikes the same point on the screen, which cannot, of course, be quite directly opposite the second hole. It is clear that the waves passing through No. 2 hole will have a very slightly longer distance to travel than those passing more directly from the first hole. If these two waves meet on the first dark band they interfere with each other, so the one wave must be exactly half a wave-length behind the other. Therefore the difference in the lengths of these two trains of waves will be exactly one half wave-length. Young found it possible to measure the very small difference in these two distances, and found it to be only one eighty-thousandth of an inch. This was, therefore, the measurement of one half wave-length of red light, so that the waves of red light measure one forty-thousandth of an inch. The other colours of the spectrum could be measured in the same way.

*From Scientific Ideas of To-day,*

by CHARLES R. GIBSON, LL.D., F.R.S.E.

By kind permission of Messrs. Seeley, Service & Co.

## INVISIBLE RAYS

BETWEEN the mind of man and the outer world are interposed the nerves of the human body, which translate, or enable the mind to translate, the impressions of that world into facts of consciousness or thought.

Different nerves are suited to the perception of different impressions. We do not see with the ear, nor hear with the eye, nor are we rendered sensible of

sound by the nerves of the tongue. Out of the general assemblage of physical actions, each nerve, or group of nerves, selects and responds to those for the perception of which it is specially organised.

The optic nerve passes from the brain to the back of the eyeball and there spreads out to form the retina, a web of nerve filaments, on which the images of external objects are projected by the optical portion of the eye. This nerve is limited to the apprehension of the phenomena of radiation, and, notwithstanding its marvellous sensibility to certain impressions of this class, it is singularly obtuse to other impressions.

Nor does the optic nerve embrace the entire range even of radiation. Some rays, when they reach it, are incompetent to evoke its power, while others never reach it at all, being absorbed by the humours of the eye. To all rays which, whether they reach the retina or not, fail to excite vision, we give the name of invisible or obscure rays. All non-luminous bodies emit such rays. There is no body in nature absolutely cold, and every body not absolutely cold emits rays of heat. But to render radiant heat fit to affect the optic nerve a certain temperature is necessary. A cool poker thrust into a fire remains dark for a time, but when its temperature has become equal to that of the surrounding coals, it glows like them. In like manner, if a current of electricity, of gradually increasing strength, be sent through a wire of the refractory metal platinum, the wire first becomes sensibly warm to the touch ; for a time its heat augments, still however remaining obscure ; at length we can no longer touch the metal with impunity ; and at a certain definite temperature it emits a feeble red light. As the current augments



in power the light augments in brilliancy, until finally the wire appears of a dazzling white. The light which it now emits is similar to that of the sun.

By means of a prism Sir Isaac Newton unravelled the texture of solar light, and by the same simple instrument we can investigate the luminous changes of our platinum wire. In passing through the prism all its rays (and they are infinite in variety) are bent or refracted from their straight course ; and, as different rays are differently refracted by the prism, we are by it enabled to separate one class of rays from another. By such prismatic analysis Dr. Draper has shown, that when the platinum wire first begins to glow, the light emitted is sensibly red. As the glow augments the red becomes more brilliant, but at the same time orange rays are added to the emission. Augmenting the temperature still further, yellow rays appear beside the orange ; after the yellow, green rays are emitted ; and after the green come, in succession, blue, indigo, and violet rays. To display all these colours at the same time the platinum wire must be *white-hot* : the impression of whiteness being in fact produced by the simultaneous action of all these colours on the optic nerve.

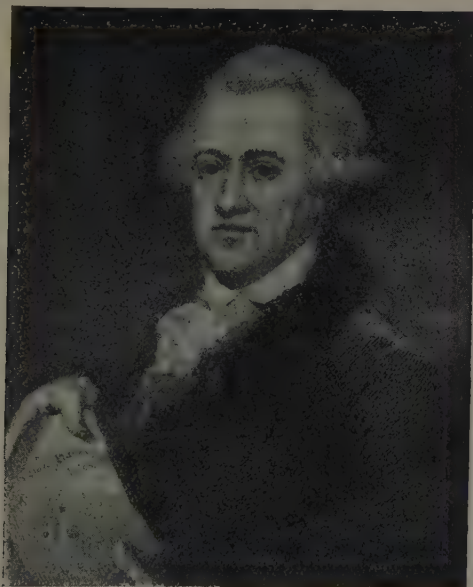
In the experiment just described we began with a platinum wire at an ordinary temperature, and gradually raised it to a white heat. At the beginning, and even before the electric current had acted at all upon the wire, it emitted invisible rays. For some time after the action of the current had commenced, and even for a time after the wire had become intolerable to the touch, its radiation was still invisible. The question now arises, What becomes of these invisible

rays when the visible ones make their appearance ? It will be proved in the sequel that they maintain themselves in the radiation ; that a ray once emitted continues to be emitted when the temperature is increased, and hence the emission from our platinum wire, even when it has attained its maximum brilliancy, consists of a mixture of visible and invisible rays. If, instead of the platinum wire, the earth itself were raised to incandescence, the obscure radiation which it now emits would continue to be emitted. To reach incandescence the planet would have to pass through all the stages of non-luminous radiation, and the final emission would embrace the rays of all these stages. There can hardly be a doubt that from the sun itself, rays proceed similar in kind to those which the dark earth pours nightly into space. In fact, the various kinds of obscure rays emitted by all the planets of our system are included in the present radiation of the sun.

The great pioneer in this domain of science was Sir William Herschel. Causing a beam of solar light to pass through a prism, he resolved it into its coloured constituents ; he formed what is technically called the solar spectrum. Exposing thermometers to the successive colours he determined their heating power, and found it to augment from the violet or most refracted end, to the red or least refracted end of the spectrum. But he did not stop here. Pushing his thermometers into the dark space beyond the red he found that, though the light had disappeared, the radiant heat falling on the instruments was more intense than that at any visible part of the spectrum. In fact, Sir William Herschel showed, and his results have been verified by various philosophers since his time, that besides its

luminous rays, the sun pours forth a multitude of other rays, more powerfully calorific than the luminous ones, but entirely unsuited to the purposes of vision.

At the less refrangible end of the solar spectrum, then, the range of the sun's radiation is not limited by



WILLIAM HERSCHEL

that of the eye. The same statement applies to the more refrangible end. Ritter discovered the extension of the spectrum into the invisible region beyond the violet ; and, in recent times, this ultra-violet emission has had peculiar interest conferred upon it by the admirable researches of Professor Stokes. The complete calorific] heat-producing.

spectrum of the sun consists, therefore, of three distinct parts :—first, of ultra-red rays of high heating power, but unsuited to the purposes of vision ; secondly, of luminous rays which display the succession of colours, red, orange, yellow, green, blue, indigo, violet ; thirdly, of ultra-violet rays which, like the ultra-red ones, are incompetent to excite vision, but which, unlike the ultra-red rays, possess a very feeble heating power. In consequence, however, of their chemical energy these ultra-violet rays are of the utmost importance to the organic world.

JOHN TYNDALL, *Fragments of Science*.

## RADIO-ACTIVITY

IN 1896 one of the elements, uranium, the last on the list, was discovered by Becquerel in Paris to possess a new property. It was described as radio-active, to signify that it was continually and spontaneously emitting a new kind of radiation, analogous in its chief characteristics to the X-rays of Röntgen, discovered the year previously.

M. and Mme. Curie then showed that thorium, the element next to uranium in atomic weight, possessed a similar property, but with the doubtful exception of two others, potassium and rubidium, none of the other elements then known show the least evidence of radio-activity. Going back to the natural minerals in which uranium occurs such as pitchblende, M. and Mme. Curie discovered therein several intensely radio-active new elements in almost infinitesimal quantity, the best known of which is radium.

The radium is present in pitchblende in very minute

quantity, not more than one part in five or ten millions of the mineral at most. Small as the quantity was, M. and Mme. Curie succeeded in isolating the compounds of radium in the pure state and ultimately accumulated enough, not only for a detailed investigation of its extraordinary radio-activity, but also of its chemical character, spectrum, and atomic weight. Chemically it was normal in every respect, with a close resemblance to barium, and its chemical character could have been predicted from the Periodic Law before its discovery. But in addition to its chemical character it had a whole new set of surprising radioactive properties in a very intense degree.

These discoveries naturally aroused the very greatest scientific interest. The very existence of radium, a substance capable of giving off spontaneously powerful new radiations which can be transformed into light and heat, and, indeed, not only capable of doing this, but, so far as we know, incapable of not doing it, ran counter to every principle of physical science. For whence comes the energy that is being given out in the process?

So soon as pure radium compounds became available, the amount of this energy was measured, and it was found to be sufficient to heat a quantity of water equal to the weight of the radium from the freezing-point to the boiling-point every three-quarters of an hour. In the combustion of fuel from which the world draws by far the greater part of the energy it needs, the heat evolved is sufficient to raise a weight of water some 80 to 100 times the weight of the fuel from the freezing-point to the boiling-point. Hence radium, weight for weight, gives out as much heat as the best fuel every three days, and in the fifteen years that have elapsed

(1917) since it was first isolated, a quantity of energy nearly two thousand times as much as is obtainable from fuel has been given out by the radium, and the supply as yet shows no signs of exhaustion.

. . . . .

If a chemist were to purify a substance and put it away in a sealed bottle, and then found, on re-examining it at a later time, that it was again impure, he would of course at first distrust the effectiveness of his purification. Let us suppose he purified lead from every trace of silver, and coming back after some time re-examined the purified lead and again found that silver was present in it. He would again purify it and test it with even greater care. But if again he found, after an interval, that it still contained silver, he would be forced to the conclusion that the silver had *grown* in the lead, and the doctrine of the unchangeableness of the elements would be at an end.

This is exactly what Rutherford and the writer were forced to conclude in the case of thorium, and ultimately of all the radio-active elements. Their radio-activity is due in large measure to minute quantities of impurities, of totally different chemical character from themselves, that can be readily and completely removed by simple purification processes. But, once the impurities have been removed, the substances so purified do not remain pure. At a perfectly definite rate they regrow or produce the radio-active impurities, and these can be again separated as often as desired. The radio-activity of the separated products dies away or decays, and the apparently steady continuous emission of rays from the parent substance is due to an equilibrium, in which new radio-active products are



formed as fast as the radio-activity of those already produced disappears.

Very rapidly a complete and satisfactory theory of the whole phenomena was developed, and fourteen years of further development (1917) of the science have not necessitated any modification. The atoms of the radio-elements are not permanently stable. After a term of existence which may be long or short, according to the nature of the atom in question, and which for the individual atoms of the same radio-element may have any actual value, but is for the average of all the atoms of any one kind a perfectly definite period, known as the period of average life, the atom explodes. Fragments are expelled from it at hitherto unknown velocities, constituting the rays. What is left is the new atom of a new element, totally different from the parent.

The radio-elements are in course of spontaneous transmutation into other elements, and the process proceeds through a long succession of more or less unstable intermediate elements, until the final stable product is reached.

In this process, energy is evolved of the order of a million times greater than the energy ever liberated in ordinary chemical changes, in which the *groups of atoms*, or the molecules, change, but not the constituent atoms themselves. The energy evolved by an ounce of radium, in the course of its life, equals that evolved from the burning of ten tons of coal. The period of average life in this case is about 2500 years, which means that  $\frac{1}{2500}$ th part of any quantity of radium changes per annum.

FREDERICK SODDY, *The Evolution of Matter*.

By kind permission of the author.

## AN A.B.C. OF ATOMS

To the eye or to the touch, ordinary matter appears to be continuous ; our dinner-table, or the chairs on which we sit, seem to present an unbroken surface. We think that if there were too many holes the chairs would not be safe to sit on. Science, however, compels us to accept a quite different conception of what we are pleased to call ' solid ' matter ; it is, in fact, something much more like the Irishman's definition of a net, ' a number of holes tied together with pieces of string.' Only it would be necessary to imagine the strings cut away until only the knots were left.

When science seeks to find the units of which matter is composed, it is led to continually smaller particles. The largest unit is the molecule, but a molecule is as a rule composed of ' atoms ' of several different ' elements.' For example, a molecule of water consists of two atoms of hydrogen and one of oxygen, which can be separated from each other by chemical methods. An atom, in its turn, is found to be a sort of solar system, with a sun and planets ; the empty regions between the sun and the planets fill up vastly more space than they do, so that much the greater part of the volume that seems to us to be filled by a solid body is really unoccupied. In the solar system that constitutes an atom, the planets are called ' electrons ' and the sun is called the ' nucleus.' The nucleus itself is not simple except in the case of hydrogen ; in all other cases, it is a complicated system consisting, in all likelihood, of electrons and hydrogen nuclei (or protons, as they are also called).

With electrons and hydrogen nuclei, so far as our present knowledge extends, the possibility of dividing up matter into bits comes to an end. No reason exists for supposing that these themselves have a structure, and are composed of still smaller bits. We do not know, of course, that reasons may not be found later for sub-dividing electrons and hydrogen nuclei; we only know that so far nothing prevents us from treating them as ultimate. It is difficult to know whether to be more astonished at the smallness of these units, or at the fact that there are units, since we might have expected matter to be divisible *ad infinitum*. It will help us to picture the world of atoms if we have, to begin with, some idea of the sizes of these units. Let us start with a gramme of hydrogen, which is not a very large quantity. How many atoms will it contain? If the atoms were made up into bundles of a million million, and then we took a million million of these bundles, we should have about a gramme and a half of hydrogen. That is to say, the weight of one atom of hydrogen is about a million-millionth of a million-millionth of a gramme and a half. Other atoms weigh more than the atom of hydrogen, but not enormously more; an atom of oxygen weighs 16 times as much, an atom of lead rather more than 200 times as much. *Per contra*, an electron weighs very much less than a hydrogen atom; it takes about 1850 electrons to weigh as much as one hydrogen atom.

The space occupied by an atom is equally minute. As we shall see, an atom of a given kind is not always of the same size; when it is not crowded, the electrons which constitute its planets sometimes are much farther from its sun than they are under normal

terrestrial conditions. But under normal conditions the diameter of a hydrogen atom is about a hundred-millionth of a centimetre (a centimetre is about a third of an inch). That is to say, this is about twice the usual distance of its one electron from the nucleus. The nucleus and the electron themselves are very much smaller than the whole atom, just as the sun and the planets are smaller than the whole region occupied by the solar system. The sizes of the electron and the nucleus are not accurately known, but they are supposed to be about a hundred thousand times as small as the whole atom.

It might be thought that not much could be known about such minute phenomena, since they are very far below what can be seen by the most powerful microscope. But in fact a great deal is known. What has been discovered about atoms by modern physicists is doubly amazing. In the first place, it is contrary to what every man of science expected, and in part very difficult to reconcile with other knowledge and with deep-seated prejudices. In the second place, it seems to the layman hardly credible that such very small things should be not only observable, but measurable with a high degree of accuracy: Sherlock Holmes at his best did not show anything like the skill of the physicists in making inferences, subsequently verified, from minute facts which ordinary people would have thought unimportant. It is remarkable that, like Einstein's theory of gravitation, a great deal of the work on the structure of the atom was done during the war. It is probable that it will ultimately be used for making more deadly explosives and projectiles than any yet invented.

The study of the way in which atoms combine into molecules belongs to chemistry, and will not much concern us. We are concerned with the structure of atoms, the way in which electrons and nuclei come together to build up the various kinds of atoms. This study belongs to physics almost entirely. There are three methods by which most of our knowledge is obtained : the spectroscope, X-rays, and radio-activity. The hydrogen atom, which has a simple nucleus and only one electron, is studied by means of the spectroscope almost alone. This is the easiest case, and the only one in which the mathematical difficulties can be solved completely. It is the case by means of which the most important principles were discovered and accurately tested. All the atoms except that of hydrogen present some problems which are too difficult for the mathematicians, in spite of the fact that they are largely of a kind that has been studied ever since the time of Newton. But although exact quantitative solutions of the questions that arise are often impossible, it is not impossible, even with the more complex atoms, to discover the *sort* of thing that is happening when they emit light or X-rays or radio-activity.

When an atom has many electrons, it seems that they are arranged in successive rings round the nucleus, all revolving round it approximately in circles or ellipses. (An ellipse is an oval curve, which may be described as a flattened-out circle.) The chemical properties of the atom depend, almost entirely, upon the outer ring ; so does the light that it emits, which is studied by the spectroscope. The inner rings of electrons give rise to X-rays when they are disturbed, and it is chiefly by means of X-rays that their constitution is studied.

The nucleus itself is the source of radio-activity. In radium and the other radio-active elements, the nucleus is unstable, and is apt to shoot out little particles with incredible velocity. As the nucleus is what really determines what sort of atom is concerned, *i.e.* what element the atom belongs to, an atom which has ejected particles in radio-activity has changed its chemical nature, and is no longer the same element as it was before. Radio-activity has only been found among the heaviest atoms, which have the most complex structure. The fact that it occurs is one of the proofs that the nucleus of such elements has a structure and is complex. Until radio-activity was discovered, no process was known which changed one element into another. Now-a-days, transmutation, the dream of the alchemists, takes place in laboratories. But unfortunately it does not transform the baser metals into gold; it transforms radium, which is infinitely more valuable than gold, into lead—of a sort.

The simplest atom is that of hydrogen, which has a simple nucleus and a single electron. Even the one electron is lost when the atom is positively electrified: a positively electrified hydrogen atom consists of a hydrogen nucleus alone. The most complex atom known is that of uranium, which has, in its normal state, 92 electrons revolving round the nucleus, while the nucleus itself probably consists of 238 hydrogen nuclei and 146 electrons. No reason is known why there should not be still more complex atoms, and possibly such atoms may be discovered some day. But all the most complex atoms known are breaking down into simpler ones by radio-activity, so that one may guess that still more complex atoms



could not be stable enough to exist in discoverable quantities.

The amount of energy packed up in an atom is amazing, considering its minuteness: There is least energy in the outer electrons, which are concerned in chemical processes, and yield, for instance, the energy derived from combustion. There is more in the inner electrons, which yield X-rays. But there is most in the nucleus itself. This energy in the nucleus only came to be known through radio-activity; it is the energy which is used up in the performances of radium. The nucleus of any atom except hydrogen is a tight little system, which may be compared to a family of energetic people engaged in a perpetual family quarrel. In radio-activity some members of the family emigrate, and it is found that the energy they used to spend on quarrels at home is sufficient to govern an empire. If this source of energy can be utilised commercially, it will probably in time supersede every other. Rutherford—to whom, more than any other single man, is due the conception of the atom as a solar system of electrons revolving round a nucleus—is working on this subject, and investigating experimental methods of breaking up complex atoms into two or more simpler ones. This happens naturally in radio-activity, but only a few elements are radio-active, at any rate to an extent that we can discover. To establish the modern theory of the structure of nuclei on a firm basis, it is necessary to show, by artificial methods, that atoms which are not naturally radio-active can also be split up. For this purpose, Rutherford has subjected nitrogen atoms (and others) to a severe bombardment, and has succeeded in detaching hydrogen atoms from them.

One of the most astonishing things about the processes that take place in atoms is that they seem to be liable to sudden discontinuities, sudden jumps from one state of continuous motion to another. The motion of an electron round its nucleus seems to be like that of a flea, which crawls for a while and then hops. The crawls proceed accurately according to the old laws of dynamics, but the hops are a new phenomenon, concerning which totally new laws have been discovered empirically, without any possibility (so far as can be seen) of connecting them with the old laws. There is a possibility that the old laws, which represented motion as a smooth continuous process, may be only statistical averages, and that, when we come down to a sufficiently minute scale, everything really proceeds by jumps, like the cinema, which produces a misleading appearance of continuous motion by means of a succession of separate pictures.

HON. BERTRAND RUSSELL, *An A.B.C. of Atoms.*

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## SMASHING UP ATOMS

WE used to think of atoms—when we thought of them at all—as little round hard things like minute marbles. We had not any reason to suppose them round, but that was the easiest way to think of them. The reason we imagined them hard was that there seemed no possible way to break them up into smaller pieces, and we are accustomed to think of unbreakable things as hard. The very word ‘atom’ meant something that could not be subdivided. The Greek philosophers who invented the term thought that they had reached the

ultimate units of which all matter is composed. Modern chemists inherited the idea of the indivisible atom from the ancient Greeks and applied it to the elements that they were not able to decompose. There were some eighty of these elements known, and no one of them could be changed into any other or split up into finer particles.

But now in view of our increasing knowledge we must discard this old crude notion of the atom and think of it as a sort of solar system with a central nucleus around which revolve at enormous speeds one or more lighter bodies called 'electrons,' as the earth and other planets revolve round the sun.

The nucleus, the sun of the atomic system, is charged with positive electricity. The electrons, on the contrary, are charged with negative electricity, or, we might better say, are atoms of negative electricity. Positive and negative electricities attract each other, and so the electrons are kept from flying the track by the attraction of the positive nucleus as the earth is kept in its orbit by the attraction of the gravitation of the sun.

The reason why we have come to believe that the atom is not a simple and indivisible thing but is made up of these two minute particles, nuclei and electrons, is because we can actually get them out of the atom.

The electron is more easily dislodged than the nucleus because it is much lighter and is on the outside. For illustration, if a big comet came driving through the solar system it would be much more likely to carry off one of the planets, especially the outermost, Neptune or Uranus, than it would to disturb the sun in the centre. So, too, we find that the electrons revolving in the

outermost orbits of the atomic system can sometimes be knocked off by light or electricity. If a metal is heated to redness it will begin to give off electrons. Or if a ray of sunlight strikes a metal it will dislodge a few electrons from the outer rings of the atoms. If instead of sunlight the more energetic X-rays strike the plate more electrons will be liberated, some of them even from the inner rings nearest to the nucleus. The atom that has thus been robbed of one or more of its electrons will soon replace them by gathering in any stray electrons that happen to come within reach.

To smash up the nucleus itself is a much more difficult undertaking than to knock one of its satellite electrons out of the ring. But even this was actually accomplished by Sir Ernest Rutherford of Cambridge University. He did it very ingeniously by bombarding the nucleus with the fragments of other exploding nuclei. The atoms of radium and a few other heavy metals are in an unstable state. A certain proportion of the atoms of radium are breaking up spontaneously all the time, giving off very powerful radiations of three different sorts, partly X-rays, partly streams of negative electrons, partly streams of positive particles. These last are called 'alpha particles' on account of the fondness of scientists for talking Greek.

The alpha particles, after they have picked up a couple of electrons apiece, turn out to be ordinary neutral atoms of helium, the lightest of gases next to hydrogen. That is, an alpha particle is the nucleus or central sun of a helium atom. Its size is about one trillionth of an inch—if you know how little that is.

But although the alpha particles are so minute they are shot out from the radium atoms at such high speed

that they have great penetrating power. They will not only penetrate a metal but actually pass through the atom of the metal. An alpha particle striking a sheet of aluminium may go right through one hundred thousand atoms before it is stopped. About two particles in every million may come into collision with the inner nucleus of the aluminium atoms and knock it to pieces.

Now when this occurs the pieces of the positive nucleus turn out to be the nuclei of hydrogen. The nucleus of hydrogen starts off with even more energy than the alpha particle which released it, and as it dashes off at high speed among and through the surrounding atoms it snatches from one of them a negative electron and so becomes an ordinary hydrogen atom. That is to say, if we subject a sheet of metallic aluminium to a radium bombardment we shall get from it minute amounts of hydrogen gas.

Here, then, is a case of the direct transmutation of the elements proved by experiment. But it does not stand alone. Professor Rutherford has been able to get hydrogen out of boron, nitrogen, fluorine, sodium, and phosphorus as well as from aluminium. While this work was done in England, it confirmed in a remarkable way a theory of the constitution of atom nuclei propounded four years before in America. At that time Professor Harkins of the University of Chicago developed a hydrogen-helium theory which pointed out specifically that only elements of odd numbers should give hydrogen by disintegration; and the surprising fact is that the elements listed above as giving hydrogen have numbers 5, 7, 9, 11, 13, and 15, which are all odd numbers. The heavier atoms, such

as gold and lead, are not disintegrated, even although their nuclei are probably less stable. This is because, as is well known, positive electricity repels positive electricity. The nuclei of very heavy atoms are charged with a much larger positive charge and thus repel the positively charged alpha particles so greatly that they are not able to approach closely enough to disrupt the heavy atom nucleus.

Neither does oxygen, though it is comparatively light and its positive nuclear charge relatively small, break up under such a bombardment. This is because all the hydrogen present in it is firmly bound up into alpha particles, four of which, according to the theory, constitute the nucleus of an oxygen atom. Thus, although we have not succeeded in extracting hydrogen out of all the elements, it seems safe to infer that they all have a similar structure and are mostly made up of hydrogen, or rather of its nucleus, which seems to be one of the two units of the universe. The negative electron is the other. Four atoms of hydrogen unite to form one atom of helium, the next higher element, and the heavier atoms are all constructed up out of these two building-blocks. For instance, the atom of nitrogen, which weighs 14, is, according to the Harkins theory, composed of three heliums, each weighing four, and two extra hydrogens, which, not being so tightly bound up as those in the triplex helium, can be knocked off. Oxygen weighs 16 and is composed of four heliums and has no loosely attached hydrogens. Carbon weighing 12 is composed of three heliums and no extra hydrogen. This is why no hydrogen is given off from oxygen or carbon. But the aluminium atom weighs 27 and may be built up of six heliums and three outer



hydrogens, and this, as we have seen, gives off hydrogen when bombarded by radium.

So this new method of research not only enables us to break up the atom and change one element into another but also promises to give us an insight into the internal structure of the minutest particles in the universe.

EDWIN E. SLOSSON, *Chats on Science*.

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## THE METHOD OF DISCOVERY

I WANT to put the case clearly before you, and I will therefore show you what I mean by another familiar example. I will suppose that one of you, on coming down in the morning to the parlour of your house, finds that a tea-pot and some spoons which had been left in the room on the previous evening are gone,—the window is open, and you observe the mark of a dirty hand on the window-frame, and perhaps, in addition to that, you notice the impress of a hob-nailed shoe on the gravel outside. All these phenomena have struck your attention instantly, and before two seconds have passed you say, ‘Oh, somebody has broken open the window, entered the room, and run off with the spoons and the tea-pot!’ That speech is out of your mouth in a moment. And you will probably add, ‘I know there has ; I am quite sure of it!’ You mean to say exactly what you know ; but in reality you are giving expression to what is, in all essential particulars, an Hypothesis. You do not *know* it at all ; it is nothing but an hypothesis rapidly framed in your own mind ! And, it is an hypothesis founded on a long train of inductions and deductions.

What are those inductions and deductions, and how have you got at this hypothesis? You have observed, in the first place, that the window is open; but by a train of reasoning involving many Inductions and Deductions, you have probably arrived long before at the General Law—and a very good one it is—that windows do not open of themselves; and you therefore conclude that something has opened the window. A second general law that you have arrived at in the same way is, that tea-pots and spoons do not go out of a window spontaneously, and you are satisfied that, as they are not now where you left them, they have been removed. In the third place, you look at the marks on the window-sill, and the shoe-marks outside, and you say that in all previous experience the former kind of mark has never been produced by anything else but the hand of a human being; and the same experience shows that no other animal but man at present wears shoes with hob-nails in them, such as would produce the marks in the gravel. I do not know, even if we could discover any of those ‘missing links’ that are talked about, that they would help us to any other conclusion! At any rate the law which states our present experience is strong enough for my present purpose. You next reach the conclusion, that as these kinds of marks have not been left by any other animals than men, or are liable to be formed in any other way than by a man’s hand and shoe, the marks in question have been formed by a man in that way. You have, further, a general law, founded on observation and experience, and that too, I am sorry to say, a very universal and unimpeachable one,—that some men are thieves; and you assume at once from all these

premisses—and that is what constitutes your hypothesis—that the man who made the marks outside and on the window-sill, opened the window, got into the room, and stole your tea-pot and spoons. You have now arrived at a *Vera causa*;—you have assumed a cause which it is plain is competent to produce all the phenomena you have observed. You can explain all these phenomena only by the hypothesis of a thief. But that is a hypothetical conclusion, of the justice of which you have no absolute proof at all; it is only rendered highly probable by a series of inductive and deductive reasonings.

I suppose your first action, assuming that you are a man of ordinary common sense, and that you have established this hypothesis to your own satisfaction, will very likely be to go off for the police, and set them on the track of the burglar, with the view to the recovery of your property. But just as you are starting with this object, some person comes in, and on learning what you are about, says, ‘My good friend, you are going on a great deal too fast. How do you know that the man who really made the marks took the spoons? It might have been a monkey that took them, and the man may have merely looked in afterwards.’ You would probably reply, ‘Well, that is all very well, but you see it is contrary to all experience of the way tea-pots and spoons are abstracted; so that, at any rate, your hypothesis is less probable than mine.’ While you are talking the thing over in this way, another friend arrives, one of that good kind of people that I was talking of a little while ago. And he might say, ‘Oh, my dear sir, you are certainly going on a great

*Vera causa*] true cause.

deal too fast. You are most presumptuous. You admit that all these occurrences took place when you were fast asleep, at a time when you could not possibly have known anything about what was taking place. How do you know that the laws of Nature are not suspended during the night? It may be that there has been some kind of supernatural interference in this case.' In point of fact, he declares that your hypothesis is one of which you cannot at all demonstrate the truth, and that you are by no means sure that the laws of Nature are the same when you are asleep as when you are awake.

Well, now, you cannot at the moment answer that kind of reasoning. You feel that your worthy friend has you somewhat at a disadvantage. You will feel perfectly convinced in your own mind, however, that you are quite right, and you say to him, 'My good friend, I can only be guided by the natural probabilities of the case, and if you will be kind enough to stand aside, and permit me to pass, I will go and fetch the police.' Well, we will suppose that your journey is successful, and that by good luck you meet with a policeman; that eventually the burglar is found with your property on his person, and the marks correspond to his hand and to his boots. Probably any jury would consider those facts a very good experimental verification of your hypothesis, touching the cause of the abnormal phenomena observed in your parlour, and would act accordingly.

Now, in this supposititious case, I have taken phenomena of a very common kind, in order that you might see what are the different steps in an ordinary process of reasoning, if you will only take the trouble to analyze

it carefully. All the operations I have described, you will see, are involved in the mind of any man of sense in leading him to a conclusion as to the course he should take in order to make good a robbery and punish the offender. I say that you are led, in that case, to your conclusion by exactly the same train of reasoning as that which a man of science pursues when he is endeavouring to discover the origin and laws of the most occult phenomena. The process is, and always must be, the same : and precisely the same mode of reasoning was employed by Newton and Laplace in their endeavours to discover and define the causes of the movements of the heavenly bodies, as you, with your own common sense, would employ to detect a burglar. The only difference is, that the nature of the inquiry being more abstruse, every step has to be most carefully watched, so that there may not be a single crack or flaw in your hypothesis. A flaw or crack in many of the hypotheses of daily life may be of little or no moment as affecting the general correctness of the conclusions at which we may arrive ; but in a scientific inquiry a fallacy, great or small, is always of importance, and is sure to be in the long run constantly productive of mischievous, if not fatal results.

THOMAS HENRY HUXLEY, *Lectures.*

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